

Machinery

and production engineering

INDEX TO VOLUME 116 January to June, 1970

THE MACHINERY PUBLISHING COMPANY LTD.

Editorial Office:

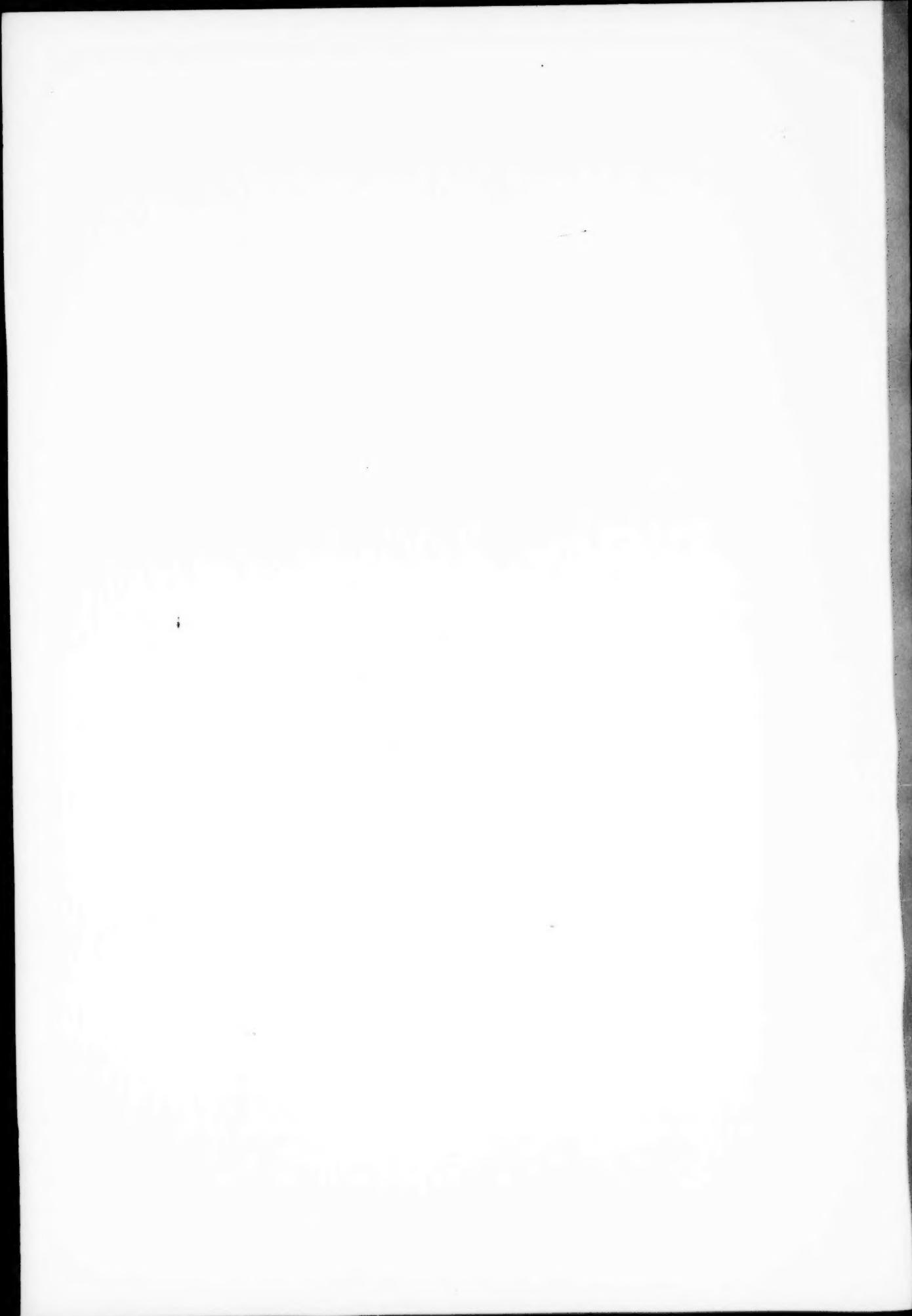
CLIFTON HOUSE, 83-117 EUSTON ROAD, LONDON, N.W.1

Telephone: 01-387 8441 (4 lines) Telephone: Machtool, London, N.W.1

Head Office:

NEW ENGLAND HOUSE, NEW ENGLAND STREET, BRIGHTON BN1 4HN

Telephone: Brighton (OBR 3) 61334 (4 lines) Telegrams: Machtool, Brighton



INDEX TO MACHINERY

Page	Page	Page
A A.C. Cutting Machines, Ltd. AC-Delco Divn of General Motors, Ltd: Some experiences of mechanized assembly AE Group Machines, Ltd: Fully-automatic inspection fixture for checking the radial thickness of piston rings AED plasma-spraying technology service AEI Electronics, Ltd: Production of an accurate reflector AEI-Elliott Process Automation, Ltd: Computer control for large warehouse Logicom 2 static switching system AERE exhibits at Physics Exhibition AEW, Ltd: Move to Andover industrial area 6-chamber electrically-heated oven and 81kW conveyor oven AGA (UK), Ltd: AGAmig 300 power source for MIG/CO ₂ welding Gas and Welding Divn: Selling arrangements for AGA (Sweden) welding equipment AMF Versatran Divn: Film: Die casting under robot control Versatran robot increases die casting production APT Electronic Industries, Ltd: Use of Comparascope inspection instrument APV-Desco (Ireland), Ltd: Stainless steel fabrication ARO Machinery Co, Ltd: Film: Production of gas cookers at Arthur Martin, Rheims NF225 spot-welding gun and CD122 control unit Portable guns for spot welding operations on tractor bonnets ATA Grinding Processes: Type RA15 Mini-Grinder AUTO-DIE computer program AUTOPOL. Churchill post-processor for AUTOPOL. GKN use Heinemann NC lathe with AWRE exhibit at Physics Exhibition Abnox blow gun with air shield Abrasive band grinding and polishing machine with dust collection unit. Linisher Abrasive-belt machine, The wide - its contribution to metal working Abrasive, Borazon type II industrial Abrasive Developments, Ltd: Developments in the Vacnac system Abrasive, diamond, for dry grinding. De Beers RDAR50C Abrasive-jet treatment to improve lubrication Abwood Machine Tools, Ltd: Rotary table surface grinder for operations on aircraft engine fixture parts Acbars, Ltd "Accuracy" and "repeatability", Qualification of the terms, for NC positioning Accuratoool programme-controlled castan lathe. Hand loading for an Accuratoool turret lathes. INA Automation loading systems for Accuratoool type 6D programme-controlled automatic-cycle turret lathe. Dowding & Doll Acheson Colloids Co: Acheson/Pimrock lubrication system in use at Magnatec Dagstrip 10 release coating applied to epoxy resin core boxes Improvements obtained with Acheson/Rimrock die lubrication system Acrow Automation, Ltd: Acrowrack 88 storage rack system Acralite resin. Copy machining masters made from Actuator. Storactor linear electric Actuators. New Serck Gloccon control valves and Adan Hydraulics, Ltd Moog-Adcock & Shipley demonstration vehicle Type 2E production milling machine Adcock & Shipley (Sales), Ltd: Bridgport milling machines for dispatch to West Germany 	Addison Tool Co, Ltd: Addison-Leonard 35 Tubemill tube-end milling machine "Universal" 60 hydraulic tube bending machine Advanced Graphics System. ICL 7300 Aerojet-General Corporation: Metal-working with explosives NC turret lathe employed for precision deep hole drilling Aeronautical & General Instruments, Ltd: Machining precision components under programme and tape control 322, 7E Mar 18, 493 Aeroplane & Motor Aluminium Castings, Ltd: Aluminium cylinder head castings Air-bearing spindles. Some applications of Westwind Air bearings. New Convair Air cylinders. Schrader "self-reciprocating" Air flotation of fixtures and machines Air gauge for measuring flow restriction in cigarette filter rod. Solex Air-operated hydraulic power pack. Olin Mathieson Air Products, Ltd: Cryo-Trim deflashing equipment for rubber mouldings Air valve. Miniature Aircraft engine fixture parts. Abwood rotary table surface grinder for operations on Aircraft engines. "Low-tolerance" weight-saving in Aircraft landing gears for Boeing 747. New plant for production of Airline coupling. Kuhnke miniature Ajax of Coventry, Ltd: Hexadrill drilling jig Alarm systems. Norgren Fluidics process monitoring and Albright & Wilson, Ltd: Associated Chemical Companies Divn: New chromium plating compounds Alibula universal tool and cutter grinder, Hispano-Suiza Alcosa type EM15 oil-free rotary blower and vacuum pump Aldridge Tool & Engineering Co, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition Alexander, George H, Machinery Ltd 264, 528, 547, 581 Aikan, M L, Ltd: Installation of automatic plating plant at Sealectro Ltd Allichin, E F, & Co Alday, William, & Co, Ltd: Alcosa type EM15 oil-free rotary blower and vacuum pump Allen-Bradley UK, Ltd: Exhibits at Electrex '70 International Electrical Engineers' Exhibition Allen, P W, & Co: Blacklight illuminated magnifier Allen-Stevens Corp: Die casting production increased by AMF Versatran robot Allen West (Brighton), Ltd: Electronic control equipment for flying shears Exhibits at Electrex '70 International Electrical Engineers' Exhibition Alloying process. A new Almco Superheat Divn of GB, Ltd: Deburring unit Alston, J & S, universal relieving attachment Aluminium bar for conductors. Continuous casting of Aluminum Bronze Co, Ltd: Use of Dagstrip 10 release coating on epoxy resin core boxes Aluminium containers. Bubble-casting of Aluminium extrusion and foil rolling Aluminium labels or panels. Keramatic machine for making Aluminium plate cutting machine. Large Aluminium trip-plate. Extruded-section Amada 16-in fully-automatic hydraulic bandsawing machine Ambersil, Ltd: 40+ compound for maintenance work American Airlines, Inc: Abrasive-jet treatment to improve lubrication 	American Chain & Cable Co: Wilson Instrument Divn: Hardness testers for plastics and rubber Rockwell hardness tester with digital read-out American Optical Co: Refractometer for monitoring cutting fluid concentration American Standard, USA: Air Conditioning Divn: Use of track-mounted feeding units for stamping presses Amtec France S A: Demonstration of machining of gear blanks on Amtec-New Britain chucking automatic Anocut Engineering Co: Machines installed at Rolls-Royce Bristol Engine Divn Novel design of ECM machine Anti-crabbing mechanism for large bridge type machine Appledore Shipbuilders, Ltd: Opening of totally-enclosed shipyard Appleton, E: Rotary forging Aquisulf 10 soluble cutting oil Arcmaster Perspex screen Ardometer M250 radiation pyrometer. Siemens Ardrox, Ltd: Automated flaw detection equipment Armature curing oven. Barlow-Whitney Armatype, Prof W H G., MA: Technological forecasting Ashby, S: Group technology and the cell system Assembly and testing of gearboxes for commercial vehicles. Efficient manufacture Assembly and testing of the 1485-cc E-series engine for the Maxi car. Production 402, 522, 602 Assembly, Machining and, at one set-up on a Traub automatic Assembly, Mechanized - some experiences of a leading user Assembly of small electrical capacitors. Worcester Automation in-line machine for the Assembly, printed circuit, Equipment for rapid Associated Engineering Developments, Ltd: Plasma-spraying technology service Aston in Birmingham University: Some aspects of SI and its use Aston, R L: Design of conical hydrostatic journal bearings Aurora Gearing Co (Wilmot North), Ltd: Jolly-type fluid/mechanical coupling Australian Fabromatic unit-head machines Auto-Bale furnace for die casting. Monometer Allen, P W, & Co: Blacklight illuminated magnifier Allen-Stevens Corp: Die casting production increased by AMF Versatran robot Allen West (Brighton), Ltd: Electronic control equipment for flying shears Exhibits at Electrex '70 International Electrical Engineers' Exhibition Alston, J & S, universal relieving attachment Aluminium bar for conductors. Continuous casting of Aluminium Bronze Co, Ltd: Use of Dagstrip 10 release coating on epoxy resin core boxes Aluminium containers. Bubble-casting of Aluminium extrusion and foil rolling Aluminium labels or panels. Keramatic machine for making Aluminium plate cutting machine. Large Aluminium trip-plate. Extruded-section Amada 16-in fully-automatic hydraulic bandsawing machine Ambersil, Ltd: 40+ compound for maintenance work American Airlines, Inc: Abrasive-jet treatment to improve lubrication

Page	Page	Page			
Automatic cold saw, Russell One Hundred	422	Avdel, Ltd: Use of vacuum impregnation technique for crack detection	90	Batch production, NC applied to large Batch production, small, Universal power chucks facilitate	282
Automatic-cycle gear hobbing machines, Mikron types A24 and A21/2	657	Avenger car, 1000 cold-extruded half-shafts per shift for the Hillman	430	Batch production, The Serck Audio-cell system of	860
Automatic-cycle lathes, Cazeeneuve type HB CA-12 and type HB CAT-12	547	Avery, M F, C Eng, M I Mech E, F I Prod E, M B I M, F Comm A: Capital investment in manufacturing industry	7, 76	Bath, Tecam fluidized, for cleaning plastics extrusion dies	82
Automatic-cycle milling machine, Dufour type 161 CS	315	Avery, W & T, Ltd: Digital read-out facility for weighing See also	189	Baty, J E, & Co Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	765
Automatic-cycle copy milling machine, Fritz Werner type KFI Sp	992	Avnet Shaw Processes, Ltd	669	Bearing, air-, spindles. Some applications of Westwind	730
Automatic-cycle milling machine, Giewont type FWE40, A heavy-duty	149	Axial forming technique	649	Bearing life ball, Forging technique improves	648
Automatic-cycle vertical-spindle production milling machine, Rouchaud type FV80 C113-115	543	Axle casing lathe, Dunbar & Cook automatic-cycle	115	Bearings, Design of conical hydrostatic journal	250
Automatic drilling and countersinking machine for flywheels, Bohlins	859	Axes, motor car stub, Unusual machining operations on, on a Mauser transfer machine	896	Bearings, Design of opposed-pad hydrostatic, for machine tool slideways	407
Automatic drilling of holes in gas burners, Worcester Automation special-purpose machine for	106	Aylesbury Automation, Ltd: Type 25L elevating hopper loader	103	Bearings for Matrix clutches, Needle Bearings, gas, The application of high performance	312
Automatic drilling set-up with fluidic control	229			Bearings, hydrodynamic, hydrostatic, aerostatic and ball, A comparison of the performance and operating characteristics of	499
Automatic electro-chemical marking machine, Pryor	581			Bearings, hydrostatic, and drive, A precision lathe with	618
Automatic grinding machine, Czech-built CZM type BEL 216	637			Bearings, hydrostatic, Membrane double restrictor for	619
Automatic hob sharpening machine, Mikron type A62	660			Bearings, New Convair air	490
Automatic honing of small parts for hydraulic pumps and motors	492			Beaver milling machine developments	674
Automatic hydraulic handsawing machine, Amada 16-in fully	838			Beavermatic machining centre, Balding	710
Automatic indexing fixture, Bristol Erickson	557			Beck, R & J, Ltd: Beck-Ealing optical bench	306
Automatic inspection fixture for checking the radial thickness of piston rings, Fully	554			Beech, Austin S, (Components) Ltd: British-made Flo-Dri compressed air filter	339
Automatic lathe, Polymecanique front-operated	549			Beech, Austin S, & Co, Ltd: System designed to permit more economical use of compressed air	34
Automatic lathes of 1½- and 2-in bar capacity, Nickols EMI-MEC	914			Belows Valvair, Ltd: Pneumatic equipment for light pressing and punching	102
Automatic line for producing motor car silencers	14			Belsize Engineering Co, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	775
Automatic machine for grinding centre points on taps, reamers and other tools, Junker type SH11a	109			Belting, Rounthane hollow round	105
Automatic machine for straightening blanks for twist drills, taps and other items, Junker type VRJ11	109			Bench, Beck-Ealing optical	306
Automatic machine minder, Bon type AMM	155			Bending U-shaped components for musical instruments	478
Automatic measurement of wall-thickness of fuel element cans	804			Bending workpieces four at a time	574
Automatic milling of squares and marking of shank ends of tap blanks, Junker type VFS10 machine for	110			Bendix Automotive and Automation Co.: Feed-rate coding for NC system	37
Automatic operation, Herbert Monoslide lathe converted for, with Dial-Set equipment	670			Masing/Bendix NC systems	615
Automatic operations on coining press, Maxam pneumatic cylinders for	347			Abrasives Divn: One of eight of the largest grinding wheels so far made in one piece	138
Automatic por broaching of external splines and gears	654			Automation and Measurement Divn: Computer-aided tape preparation equipment	853
Automatic seaming machine for round motor car silencers, ZR	270			Gauge for use in timing motor car engines	938
Automatic spring "untangler", Churchill Automatic system for grading workpieces on Eeseway SPRG hardness tester	433			Gauging equipment for checking dimensions and conditions on automatic transmission housings	795
Automatic tap flute grinder, Junker type NAJ 11	108			Large Sheffield Cordax measuring machine	249, 320
Automatic tool changer on Moog Hydra-Point machining centre	472			Sheffield ultrasonic machine used for machining 1½-in disc of 0.01-in molybdenum	748
Automatic tool changing equipment on TUAM type CT8 lathe	305			Industrial Metrology Divn: Gauge for tyre moulds	126
Automatic, Traub, Machining and assembly at one set-up on a	742			Product-O-Ron equipment for checking water pump bearing bores	717
Automatic turret lathe, Manurhin Decomat 50 type C sequence-controlled	544			Profilometer with inch or metric readings	301
Automatic work handling equipment on Mikron gear hobs	658			Surface roughness peak counter	994
Automatics, Effective application of Wickman	207			Bennett, D: G. sup. technology and the cell system	198
Automatics, Manurhin cam-controlled, Improved	14			Bennett Tools, Ltd: Spring making machine with Lion pitch control unit	944
Automatics, Premax type Digitex 90 and Digitex 67	460			Bennie, A J O: The wide abrasive belt machine - its contribution to metal working	863
Automatics, Stankomatic 7 and 16 sliding headstock	937, 938			Bentley M80-ton non-inclining press, Griffiths	815
Automatics, Strohm, Demonstration of	951			Berry, Richard, & Son: Flow line for producing motor car half-shafts	430
Automatics, Traub, Demonstration of	951			Beryllium copper cavities for plastics moulds, Telflow	627
Automation Advisory Centre, The work of a typical	688			Beta 3D inspection machine, Electronic attachments for centre finding on DEA	58
Automation at BLMC Colton Hackett plant	402, 522, 602			Beta-radiation thickness gauge, Netherlands	539
Automation, Ltd: Exhibits at Electrex '70 International Electrical Engineers Exhibition	795			Bi-metal strip, Electron beam welded Birmingham Aluminium Casting (1903) Co, Ltd: Design development for pressure die casting	227
See also	385				
AUTOPOL. Churchill post-processor for	437				
AUTOPOL. GKN use Heinemann NC lathes with	51				
Autoprogrammer programming equipment, Installation of VDF, at works of Salt Engineering	238				

Page	Page
Birmingham University:	
Birmingham Graduate School of Machine Tool Technology and the Integrated Graduate Programme	219
Opening of new engineering production building	597
Sintered preforms for forging	277
Blacklight illuminated magnifier	370
Blades, bandsaw, Welding bi-metal strip for the production of	227
Blanking, Chemical	214
Blanking costs, Cincinnati NC Auto-Shear designed to reduce	797
Blazek, S.:	
Cooling of die casting dies	665
Bliss, E W, (England), Ltd:	
Exhibits at Power Press Exhibition	816
Blow gun with air shield, Abnox	347
Blower and vacuum pump, Alcosa type EM15 oil-free rotary	182
Blu-Surf Thermo Engineering Co:	
Gas heating system	468
Boeing Aircraft Co:	
Failure predicted by very high frequency vibration	899
Bohlin, AB Erik:	
Drilling machine for flywheels	859
Bolts and nuts, Bunting titanium	789
Bombed SA:	
Types 209 KH and 209 DA guillotine shears	545
Bo Automation, Ltd:	
Industrial Electronics Divn:	
Type AMM automatic machine minder	155
Security key switch	534
Bonding, Explosive	419
Boneham & Turner, Ltd:	
Exhibits at Gauge and Tool Exhibition	812
Bonnets, tractor, Spot welding operations on	234
Boost units for use with Westool electromagnetic clutches and brakes	743
Booth, James, Aluminium, Ltd:	
Aluminium extrusions for machine tool trip plates	412
Installation of large Ty-Sa-Man aluminium-plate cutting machine	216
Borazon type II industrial abrasive	187
Borden Chemical Co (UK), Ltd:	
The Fascold core-making machine	900
BoreMat boring and facing head, Smith Bore-Matic 3515 vertical-spindle boring machine, Heald	31
Borg-Warner, Ltd:	
Installation of Diedesheim drum-type machine for reaming valve bodies	350
Boring and drilling machines, Tata	414
Boring and milling machine, Ratier-Forest ST100 horizontal, adapted for keyway milling	349
Boring and milling machine, Savings with the use of an NC horizontal	682
Boring bar, Dorner throw-away tip adjustable	764
Boring, deep-hole, Libby lathe adapted for	372
Boring, fine, applications, Westwind air-bearing spindles supplied for	730
Boring machine, Heald Bore-Matic 3515 vertical-spindle	152
Boring machine, Snyder duplex	372
Boring machines, Herbert Ultrafine range of unit construction fine	592
Boring machines, New range of Ex-Cell-0 fine	553
Boring machines, Ratier Forest Polyax milling, drilling and, Demonstration by W E Norton of	113
Boring, milling, drilling and tapping machines, Wadkin "family" of double-column NC	779
Boring tool with high metal removal capacity	497
Boring tools, Brooke-Davis, in use at Hamworthy Engineering	685
Boring unit, Boneham & Turner fine	812
Bosch, Robert, GmbH	615
Bound Brook, Ltd:	
Sintered oil pump gears	457
Sintered shaft support brackets incorporated in BLMC engine rocker shaft	753
Boxmoor Machine Tools, Ltd:	
Group technology and the cell system	277
See also	899, 943
Brackets, Sintered shaft support, incorporated in BLMC engine rocker shaft assembly	752
Braemer Engineering & Servicing Technique, Ltd:	
Services for production engineering	370
Brake, clutch, assembly, New Dyna-Torq	717
Brake, Components for Girling, produced by gravity die casting	822
Brake for Trennjaeger friction saws	356
Brake motors and Microspeed units.	
Demag	381
Brake unit, Westcode, produced by high-pressure die casting	819
Brakes, electro-magnetic clutches and, Boost units for use with Westool	743
Braking unit, Instabrade Mart V dc injection	331
Branson Instruments Co:	
Ultrasonic thickness testing equipment	287
Brazing equipment, AGA type VFLB-250 pin	273
Bridgeport milling machines for dispatch to West Germany	650
Bristol Erickson, Ltd:	
Exhibits at Gauge and Tool and Power Press Exhibition	764
Bristol Repetition, Ltd:	
Clamping handle	594
Bristol Tool & Gauge Co, Ltd:	
Work holding fixture with automatic indexing	557
Britain and the European Communities	361
British Aero Components, Ltd:	
Exhibits at Gauge and Tool Exhibition	776
British Cast Iron Research Association:	
Engineering properties and performance of modern iron castings	662
The Fascold core-making machine	900
British Diamond Wire Die Co, Ltd:	
Laser beam drilling of diamond dies	672
British Insulated Callender's Cables, Ltd:	
Demonstration of the BICC process of jointing oil-filled high tension aluminium cables by MIG welding technique	794
British Iron and Steel Research Association:	
Non-contact gauge for measuring the diameter of a hot bar and other exhibits at the 54th Physics Exhibition	513
British Leyland Motor Corporation:	
A series engine rocker shaft assembly incorporating four sintered shaft support brackets	752
Aspects of the Cofton Hackett plant	522
Cylinder block lines	402, 522, 602
Installation of Schenck mass-centring machines for crankshafts	118
The gear section at the Cofton Hackett Plant	602
British Metal Sinterings Association annual general meeting	437
British Olivetti, Ltd, NC Divn	122
British Petroleum Co, Ltd:	
Multigas diffusion flame burner for propane, butane, town gas and natural gas	540
British Standards Institution:	
Practical metrication conference	933
Standardization work on modular machine tool units	394
British Steel Corporation:	
Optical gauge for continuous measurement for hot-rolled rod	70
Use of digital read-out unit for weighing	189
British United Shoe Machinery Co, Ltd:	
BUD International Divn:	
Spring looping machine	944
Broaching machine, Hi-Tor vertical	585
Broaching of external splines and gears, Automatic pot	654
Broaching, Transfer line incorporating	393
Bronx Engineering Co, Ltd:	
"Cut-up" line installed in Canadian firm of steel stockholders	394
Exhibits at Gauge and Tool and Power Press Exhibition	777
Exhibits at International Wire Exhibition	944
Rolls for cold and hot forming of steel plates	77
300-ton portal frame hydraulic press	796
Bronze, injection plungers faced with, Use of	387
Brook Motors, Ltd:	
New factory at New Rossington	477
Brooke Tool Automation, Ltd:	
Rotary transfer machine installed at Opperman Gears for production of gear units	202
Brooke Tool Manf Co, Ltd:	
Brooke-Davis boring tools in use at Hamworthy Engineering	685
Exhibits at Gauge and Tool and Power Press Exhibition	772
Brooke-Strasmann end mill and shell milling cutter	772
Browell's Partnership, Ltd:	
Improved Lucy Switch pressure switches and Lucy Gauges pressure indicators	625
Brown, David, Gear Industries, Ltd:	
Paint for moulds for steel castings	469
Producing the range of Radicon worm-gear reduction units	882
Brue & Kjaer Taylor-Hobson Surtronic "miniature traverse unit" for measuring surface finish	57
Brue & Kjaer sound testing equipment	445
Brush Instruments:	
New Datapoint recorder	126
System for determining die casting variables	824
Bruynzeel Storage Equipment:	
Mobile storage cabinet installation	61
Bubble-casting of aluminium containers	475
Buck & Hickman, Ltd:	
Exhibition at Midlands showrooms	837
Buhr Machine Tool Corp., USA:	
Rotary transfer machine for operations on connecting rods	222
System for monitoring and control of machine tools by computer	910
Trunnion-type machine for operations on steering knuckles	588
Buhr Machine Tool Co, Ltd	222, 588, 910
Building heavy presses at Cowlishaw Walker	967
Bumper plant for Russia, Redman high-output	131
Bunker-Ramo Corporation:	
Solid-state switching equipment for machine tools	186
Type 2200 point-to-point NC system applied to wire termination machine	456
Bunting Titanium, Ltd:	
Titanium bolts and nuts	789
Burflex, Ltd:	
Bench deflasher	272
"Doming" equipment	672
Burmaster, Ltd:	
Demonstration of Di-Acro type 20 NC turret punch press	139
Burmaster, Newall, Econ-O-Centre NC turret-type machining centre	188
Burkhardt & Weber MC4 machining centre	195
Burman-Castrol Industrial, Ltd:	
Production Oils Divn:	
Iliquen synthetic quenching fluid	337
Burner, BP multigas diffusion flame, for propane, butane, town gas and natural gas	540
Burwell, Reed & Kingshorn, Ltd:	
Machine for milling standard and non-standard threads on neck-ring moulds for glass and plastics containers	617
Butterworth, N A	
Concrete in machine tools	703
Byron Jackson N V:	
Use of Modulox system for planning machine layout and product flow	447

C

CAPS Equipment, Ltd:	
Exhibits at Computer Graphics 70	751
CAV, Ltd:	
Expansion plans	676
Diamond honing of components for the type DPA fuel injection pump	380
CNMP-Berthiez type TF vertical turning and boring mills	542
CVA dieing presses, Udal hood guard for	610
CZM Works:	
Cooling of die casting dies	665
Type BFL 216 automatic grinder	637
Cabinet installation, Bruynzeel mobile storage	61
Cables, jointing oil-filled high-tension aluminium, by the MIG welding process, BICC demonstration of	794
Calculator for plating, New Canning	397
Cam Technology, Inc:	
Continuous-path NC machining of computer-designed cams	453
Cam track milling machine, Snyder helical	331
Cams, Continuous-path NC machining of computer-designed	453
Camera, Polaroid CU5 Land	751
Cameras, aircraft reconnaissance, Machining components for, under programme and tape control 322, TE Mar 18	
Cans, fuel element, The Hobson production centre for	782, 802
Canning, W, & Co, Ltd:	
New calculator for plating	397
Cantilever-type structure built up from carbon fibre rods which is part of experimental equipment for in-process control when turning 6ft diameter rolls	59
Capacitors, Automatic assembly machine for small	107
Capital investment in manufacturing industry	7, 76

Page	Page
CAPS Equipment, Ltd:	
Exhibits at Computer Graphics 70	751
Carbide cutters ground on Ward machines.	
Marwin spiral	255
Carbide. Sandvik Coromant GC	702
Carboform carbon fibre fabric	996
Carboform prepgs	924
Carbon fibre fabric. Carboform	996
Carbon-fibre materials and their potential in general engineering. Some aspects of	922
Carbon fibre rods, Cantilever-type structure built up from, which is part of experimental equipment for in-process control when turning 8ft diameter rolls	59
Carbon fibre tape research	99
Carbon products, US firm licensed for new RAE process for making	957
Carlisle Equi-Spacer attachment	269
Carne, Rudolph, & Co, Ltd:	
Machine tool demonstration	313
See also	547
Carry-set feet for machines	347
Casting, Bubble, of aluminium containers	475
Casting, Continuous, of aluminium bar for conductors	889
Casting for tyre for rotary cement kiln. 100-ton steel	116
Casting in nickel St iron. Large machine tool	918
Casting techniques, iron, Developments in	521
Castings, iron, Engineering properties and performance of modern	662
Castings, Iron, for machine tools	96
Castings, iron, Highly-efficient use of NC turret-type machines for drilling operations on	562
Castings, Some examples of precision investment, by Smiths Industries	470
Castrol Illoquen synthetic quenching fluid	337
Caterpillar Tractor Co:	
Inertia friction welding demonstration	858
Installation of automated chromium plating system	232
Catmtr Machine Tool Corp, Ltd:	
Machine tool exhibition	22
See also	494, 572, 584
Cavities for plastics moulds. Telflow beryllium copper	627
Cazeneuve S A:	
Types HB CA-12 and HB CAT-12 automatic-cycle lathes	547
Type HBX 360 and HB 575 centre lathes	316
CeeBee Chemical Co, Ltd:	
CeeKote protective coating for metal	791
Peelcote protective coating for metal	734
Cell, Production, at Ferranti Ltd	162
Cell system, Group technology and the 81, 156, 197, 275, 317, 635, 757, 836, 876	
Cell system of batch production. The Serck Audco	82
Cell system of machine grouping applied to the production of hot water mixing valve components	482
Cells, Group technology and machining, in the small-batch production of valves Cement-cladding for ECM machine structures	2
Center Engineering, Ltd:	
Sub-contract NC machining facilities	195
Central States Can Corp:	
Use of fluidic die protection system	151
Centre finding, Electronic attachment for, in operation on DEA Beta 3-D inspection machine	58
Centre points on taps, reamers and other tools. Junker type SH 11a automatic machine for grinding	109
Centring machines for crankshafts.	
Schenck mass	118
Century cartridge-type grease gun	330
Century-Detroit Automated Machine Divn of Babcock & Wilcox, Inc:	
Tool sharpness indicator	222
Ceramic shell investing plant. Fully-automatic	713
Chain, conveyor, application. "New Conveyor" stainless steel slat-band	153
Chain pullers. Manheim	957
Chain, Saw, for cutting soft metal	849
Chamberlain Industries Ltd:	
Staffa B10 Hydraulic motor	343
Chamfer grinding operations. Schaffner milling machine modified for	632
Chamfering machine. "Geometric" fully-automatic bar pointing and	675
Champion hot water washer, Kismet high-pressure	118
Channel Tool Distributors, Ltd	422
Chaphone Engineering Developments, Ltd:	
Vertical honing machine	349
Checking internal and external dimensions and conditions on automatic transmission housings. Bendix gauging equipment for	795
Checking large vernier calipers, etc. Heidenhain measuring bench for	60
Checking multiple dimensions on a work-piece. System E column gauging units and control modules for	777
Checking plug and ring gauges and setting masters. Federal type 136B-2 horizontal comparator for	769
Checking water pump bearing bores with the Product-O-Ron	717
Checking workpiece shapes. Temco Formulator for	807
Chemical machining, blanking and contour machining	214
Chemical machining methods. Electrical and	212, 242, 288
Chimney flue for Drax power station. Welded-steel	935
Christian, Earl:	
New air bearing for floating fixtures	490
Christy & Norris, Ltd:	
Readi-Screw conveyor units	187
Chromium-nickel base alloys. Developments in hot working of	734
Chromium plating compounds. New	429
Chromium plating system. Automated	232
Chuck, Bristol Erickson EM diaphragm	764
Chucks, Universal power, facilitate batch production	860
Chucking automatic. Machining gear blanks on an Amtec-New Britain	545
Chucking automatics. Premax type Digitex 90 and Digitex 67 bar and "Chucking centre". Cincinnati NC	460, 854
Churchill Automatic Assembly, Ltd:	
Automatic spring "untangler"	433
Headless screw orientator	498
Churchill, Charles, Ltd:	
Post-processor for AUTOPOL	437
Churchill Tools & Services, Ltd	993
Churchill Vero, Ltd	563
Cigarette filter rod. Solex air gauge for measuring the flow restriction in	811
Cincinnati Co, Ltd:	
NC Auto Shear	797
Series 16812 sheet slitter	877
Cincinnati Elektrokom machine installed at Rolls-Royce	44
Cincinnati, Milacron, Inc:	
Cintrojet 2500 solid-state EDM power supply unit	855
Continuous path NC "chucking centre"	854
Cincinnati Milacron, Ltd	854
Cincinnati Milling & Grinding Machines, Inc:	
Advantages of co-operation between machine tool builders and users	129
A method of quickly estimating cycle times for NC machining	134
HME Divn:	
British-built injection moulding machines	275
Heald Divn	153
Cintrojet solid-state power supply unit for use with EDM equipment, Cincinnati	855
Circles, Cutting, in mild steel sheet on a Vibro-Shear cutting and forming machine	836
Circuitmaster equipment for rapid printed circuit assembly	267
Cladding, Cement, for ECM machine structures	376
Clamp. Destaco type 640 toggle	390
Clamp for press tools. "Press Operations"	636
Clamp. New bar-type	877
Clamp units. Thorpenco	325
Clamping and support. Power Jacks hydraulic equipment for work	773
Clamping equipment, Spenceloc unit, in use at Hamworthy Engineering	687
Clamping handle. Bristol Repetition	594
Clamping, hydraulic, Turning fixture with built-in	607
Clark's Press Equipment, Ltd:	
New transistorized coil control unit for metal strip	817
Transistorized coil control	65
Clarkson International Wire Machinery Co, Ltd:	
Exhibits at International Wire Exhibition	946
Cleaner. BVC type TH6 heavy-duty vacuum	337
Cleaner. Dowe low-cost ultrasonic	528
Cleaning and polishing cloths. Fitex	991
Cleaning equipment. Kismet Champion high-pressure hot water	118
Cleaning. Intec-Boy suction equipment for machine	168
Cleaning plant for printed circuit production line. Ultrasonic	117
Cleaning plastics extrusion dies. Tecam fluidized bath for	729
Cleaning units. Kerry Compact ultrasonic Cleveland Pneumatic Tool Co:	
Tooling up for productivity	371
Clutch/brake assembly, New Dyna-Torq	717
Clutches and brakes. Boost units for use with Westool electro-magnetic	743
Clutches, Matrix, Needle bearings for Coated Strip, Ltd:	
Increasing use of coated strip	37
Coating for metal. CeeKote protective	79
Coating for metal. Peelcote protective	734
Coating powder. Telcoset 401/E rapid-curing epoxy	107
Coating technique for small components. Microcoat	712
Coating, Use of Dagstrip 10 release, on epoxy resin core boxes	678
Coating with nickel by metal spraying	17
Cotton Hackett plant. Aspects of the BLMC	402, 522, 602
Coil control. Clark's transistorized	65
Coil control unit for metal strip. Clark's transistorized	817
Coil stock handling equipment for stamping presses mounted on tracks	573
Coils, encapsulating machine for, Watford Electric	744
Coin-insertion mechanism for slot machine. Die cast	989
Coining press. Maxam pneumatic cylinders for automatic operations on	347
Coining press. Taylor & Challen	775
Cold-extruded half-shafts, 1000, per shift	430
Cold forging. Massey presses for hot and	651
Cold forming gear blanks on a transfer press	690
Cold-forming machines. Exceptionally large National-Kayser	574
Cold heading and thread rolling machines. New Waterbury Farrel	264
Cold saw. Russell One Hundred automatic	422
Cold sawing machine. Eisele type VMS II-PVX	269
Cold sawing machine. Wahlen-Rekord	268
Coleman Shafting & Pulley Co, Ltd	957
Collectadata type 30 system. Riden	355
Collets, Jacobs Rubber-Flex, for use on single-spindle automatics	768
Collis, J, & Sons, Ltd:	
Exhibits at Mechanical Handling Exhibition	833
Colour-coded grinding wheels. Nortex	693
Colour detectors. Erwin Sick	221
Communal ownership of very expensive machine tools	961
Communications terminal unit. Uniscope type 300 keyboard-operated	354
"Compact" ultrasonic cleaning units. Kerry	506
Compacting powder by explosives	419
Comparascope inspection instrument	412
Comparator for checking plug and ring gauges and setting masters. Federal type 136B-2 horizontal	769
Comparator, Temco Tools	807
Compound for maintenance work. Ambersil 40+	789
Compressed-air filter. Flo-Dri	339
Compressed air. System designed to permit more economical use of	34
Compressor casings. Mause transfer line for	940
Compressors. New factory for the production of Ingersoll-Rand	842
Comgraphics International, Ltd:	
Exhibits at Computer Graphics 70	752
Computer Inc:	
Type 400 CRT graphical display equipment	353
Computer-aided equipment for tape preparation. Bendix	853
Computer-aided programming by the AUTOPOL system. Heinemann NC turret lathe operated with	52
Computer-aided scheme for manufacture from design layout to finished product	162
Computer, Application of general-purpose, to design and production at Ferranti Ltd	162
Computer and type 928 graphical display unit exhibited at Computer Graphics 70. Marconi-Elliott	750
Computer as a "watch-dog". The	881
Computer control for large warehouse	174
Computer control for machine tools. Economical direct	973
Computer control of machine tools. Japanese developments in direct-on-line	427

Page	Page	Page			
Computer-designed cams. Continuous-path NC machining of	453	Control, numerical, Some aspects of Rolls-Royce activities in the field of	111	Copying equipment, Man-au-Trace, on Elliott Milmor milling machine ..	580
Computer Graphics 70. Some exhibits at	749	Control, numerical, Swedish Government factory for machine tools with ..	956	Copying equipment, Mimik, on Balding Beaver Mark II milling machine ..	674
Computer, Hob design by	947	Control, numerical, system. Feed-rate coding for Bendix ..	37	Cordax measuring machine. Large Sheffield ..	249, 320
Computer installation at F H Lloyd & Co ..	395	Control, numerical, systems. Masing/Bendix ..	615	Core boxes. Use of Dagstrip 10 release coating on epoxy resin ..	678
Computer language. GEAFT ..	470	Control, numerical, system. Servotel NC70 ..	753	Core-making machine. The Fascold ..	900
Computer program. AUTO-DIE ..	122	Control, numerical, Use of platens for producing prototype parts under ..	962	Corner notching machine. Elga Notchomatic ..	629
Computer program systems. General-purpose NC ..	25	Control, numerical, Work-holding on machine tools with ..	761	Corning Glass Works:	
Computer systems and services. Systems International ..	518	Control, numerical, Work mounting equipment for machines with ..	850	Fluidic Products Dept:	
Computer. The Bühr system for monitoring and control of machine tools by ..	910	Control or braided electrical heating elements. Cooperheat Stresser Mark 3 equipment for ..	906	Fluidic die protection system 151, 233, 452	
Computers and NC, Rolls-Royce experience with	25	Control of machine tools, The Bühr system for monitoring and direct, by computer ..	910	Fluidic sensing units and other new fluid logic equipment ..	699
Computers. Graphic display units for Computers. The growing importance of graphical data handling for	749	Control of plating plant. Sealectroboards for ..	130	Coromant GC carbide. Sandvik ..	702
Computing and NC techniques. Shaft designed and made in one day using ..	687	Control of tool temperature ..	76	Corrosion preventives. Mobiarma rust and ..	390
Concrete in machine tools	703	Control, plugboard, Hand loading system for Accuratoool capstan lathe with ..	343	Cosmocord, Ltd:	
Conductors. Continuous casting of aluminium bar for	889	Control, press, equipment. Improved Masterotor ..	755	Type A8982 vibration indicator ..	627
Cone Automatic Machine Co, Ltd: Increased NC facilities	438	Control, programme and tape, Machining precision components under 322, TE Mar 18, 493		Counter. Bendix surface roughness peak ..	994
Connecting rods. Bühr rotary transfer machine for operations on	222	Control, programme, Machines with (See Programme control. Machines with) ..		Counter-pressure die casting. The process characteristics of ..	463
Contactor. Allen West Type U00 4-pole ..	793	Control, sequence. Manurhin Decomat 50 type C automatic turret lathe with ..	544	Counters, "Orbit Controls" types 71G 500 and 71G 505 bi-directional, for position indicating for machine tools ..	917
Containers. aluminium, Bubble-casting of	475	Control, stepping-motor drive, Prosser	186	Counters. Series 436 predetermined mechanical ..	21
Continuous mill for seamless tube. £10 million	18	Control system for down feed, Tenth-Matic, on Thompson-Matrix surface grinder ..	992	Countersinking and drilling machine. Bohlin automatic 12-unit ..	859
Continuous-path NC machining of computer-designed cams	453	Control, tracer, Large Wilson 6-spindle milling machine with ..	371	Coupling. Aurora Jolly-type fluid/mechanical ..	218
Contour grinder for sharpening form milling cutters. Aldridge Mark 3 ..	767	Control unit, A R O spot welding gun and master ..	907	Coupling. Heenan VH021 eddy-current ..	182
Contour inspection. Ex-Cell-O projector tracer for	966	Control unit, coil, for metal strip. Clark's transistorized ..	817	Coupling. Kuhnk miniature airline ..	709
Contour machining. Chemical	214	Control unit, Lion pitch, on Bennett spring making machine ..	944	Coventry Gauge Tool Co, Ltd:	
Contouring operations on titanium. Use of toroidal cutters for NC	413	Control unit. PDP-14 pre-wired solid state ..	916	Matrix disc/dog clutch incorporating INA needle bearings ..	312
Control circuits. Plessey fluid logic integrated	696	Control valves and actuators. New Serck Glocen ..	741	Gauge and Measuring Divn:	
Control, coil, Clark's transistorized	65	Controller, furnace, Torvac type 3 ..	908	Matrix 3-dimensional co-ordinate measuring machine ..	835
Control, Computer, for large-warehouse	174	Controller, motor speed, Zenith Vari-speed dc ..	487	Matrix type 70 thread grinder for ball screws ..	236
Control, computer, for machine tools. Economical direct	973	Controlling stepping motors. Uni-Lec tape-controlled equipment for ..	939	Matrix 1000 optical projector ..	56
Control, computer, of machine tools. Japanese developments in direct on-line	427	Conair Divn, General Dynamics Corp: New air bearing for floating fixtures ..	490	Coventry ILC. Assistance afforded by Cowlishaw Walker & Co, Ltd:	
Control, electronic, equipment for flying shears. Allen West	972	Conveyor chain application. "New Conveyor" stainless steel slot band ..	153	Aspects of heavy press building Exhibits at Power Press Exhibition ..	967
Control, fluidic, Automatic drilling set-up with	229	Conveyor, elevator, system for handling foundry sand. GT Elecon ..	831	Crabbing, Anti-, mechanism for large bridge-type machine ..	814
Control, in-process, when turning on 6-ft diameter rolls. Cantilever-type structure made from carbon fibre rods forming part of equipment for	59	Conveyor, Lamson M package handling ..	832	Crack detection. Vacuum impregnation technique for ..	569
Control, machine tool, Solid-state logic modules for	611	Conveyor, Rollers, Intoroll ..	72	Craft training. Module, and its application in small and specialist firms ..	90
Control modules. System E column gauging units and	777	Conveyor, Stammill mobile press ..	476	Cranes, Matterson double-girder, installed at the works of Dialoy ..	507
Control, numerical, A method of quickly estimating cycle times for machining under	134	Conveyor, Udal adjustable-length conveyor units. Christy & Norris Readi-Screw ..	187	Crankshafts. Schenck mass-centring machines for ..	695
Control, Numerical, applied to large batch production	282	Conveyors, Glydeway gravity ..	712	Cri-Dan, Herbert, type CT high-speed copying and thread-chasing lathe. Demonstration set-up on ..	798
Control, numerical, Arrangements for applying, to the production of press tools	122	Cook, S J:		Crompton Parkinson, Ltd:	
Control, numerical, Center Engineering to provide facilities for sub-contract machining under	195	Proposals for the training of technicians ..	596	Cromp-Arc 250 capacitor-discharge stud-welder ..	118
Control, numerical, computer program systems. General-purpose	25	Cooling of die casting dies ..	665	Cross International, AG:	
Control, numerical, Continuous-path machining of computer-designed cams under	453	Cooper Precision Engineering, Ltd: Exhibits at Gauge and Tool Exhibition ..	813	The new factory at Knowsley ..	515, 550
Control, numerical, contouring operations on titanium under. Use of toroidal cutters for	413	Cooperheat:			
Control, numerical, Highly-efficient use of turret-type machines with	562	Stresser Mark 3 equipment for comprehensive control of braided electrical heating elements ..	906	Stresser Mark 3 equipment for comprehensive control of braided electrical heating elements ..	156
Control, numerical, Machine tools with - rate of installation	561	Co-operation between machine tool builders and users. Advantages of ..	129	Cryo-Trim deflashing equipment for rubber mouldings. Air Products ..	510
Control, numerical, Machine tools with, under direct computer control ..	2	Co-ordinate measuring machine. Matrix 3-dimensional ..	835	Cummins Engine Co, Inc:	
Control, numerical, Machines with, built by a user company	735	Co-ordinate tables. Tata ..	415	Use of Ex-Cell-O projector tracer for contour inspection ..	966
Control, numerical, Machines with (See Numerical control. Machines with)		Copy machining masters made from Acrylate resin ..	656	Curvator portable flame cutting machine. AGA ..	274
Control, numerical, program. A special-purpose	26	Copy milling machine. Fritz Werner type KFI Sp automatic-cycle ..	992	Custom 30/30 punching and nibbling machine. Strippit ..	423
Control, Numerical, programming service ..	636	Copy milling machine. Large Droop & Rein ..	210	"Cut-up" line, Bronx, installed in Canadian works ..	423
Control, numerical, Programming service by Salt Engineering for lathes with	238	Copy milling machine. Reiden type KF 500 ..	27	Cutter Master No 1 tool and cutter grinder. Ward ..	394
Control, numerical, Qualification of the terms "accuracy" and "repeatability" for positioning under	869	Copy turning operations. Multiple-diameter templates for ..	884	Cutters ground on Ward machines. Marwin spiral carbide ..	766
Control, numerical, Rolls-Royce experience with computers and	25	Copying and thread-chasing lathe. Demonstration set-up on Herbert Cri-Dan type CT high-speed ..	66	Cutters. Trend profile ..	255
Control, numerical, Savings with the use of a horizontal boring and milling machine with	682	Copying attachment on Cazeneuve HB 575 centre lathe ..	316	Cutters. Use of toroidal, for NC contouring operations on titanium ..	655

Page	Page	Page			
Cycle time for NC machining. A method of quickly estimating	134	Di-Acro type-20 NC turret punch press	139	Digital read-out. Rockwell hardness tester with	580
Cylinder block lines at the BLMC Cowton Hackett plant	522	Tangent radius wheel dresser	630	Digitex 90 and Digitex 67 automatics. Premax type	460
Cylinder blocks. Machining of gravity and pressure die cast	982	Diagrit Diamond Tools, Ltd. Hones for diamond honing injection-pump components	380	Dip soldering machine. Tangential	895
Cylinder head castings. Aluminium	927	Diagrit Grinding Co., Ltd. Exhibits at Gauge and Tool and Power Press Exhibition	770	Direct computer control of machine tools	910
Cylinder heads. Pollard rotary transfer machine for	62	Dial-indicator gauge. Hamilton Kwik-Chek	194	Direct position indication equipment for machine tools	852
Cylinders. Maxam pneumatic, for automatic operations on coining press	347	Dialoy, Ltd. Three production bays for die casting	695	Disc of 0.01-in molybdenum, 1½-in, machined on Sheffield ultrasonic machine	748
Cylinders. Schrader "self-reciprocating" air	623	Diasel equipment. Herbert Monoslide lathe with	670	Diskus DSR 600/1000 IS surface grinder	587
Czechoslovak-built CZM type BEL 216 automatic grinder	637	Diamond abrasive for dry grinding. De Beers RDAR50C	868	Display and information input/output equipment with programmable memory. Idiom	752
Czechoslovak-built type BB08 centreless grinder	423	Diamond fly cutting for mirror-finishing light alloy materials	731	Display equipment. Compute type 400 CRT graphical	353
Czechoslovak-built type VIR multi-purpose machines	270	Diamond dies. Laser beam drilling of	672	Display sub-system. Univac 1557/1558 graphic	752
D					
DEA Beta 3D inspection machine. Electronic attachment for centre finding in operation on	58	Diamond dressing tools. Needle Fliesen	955	Display terminals. Ferranti range of	750
Dagstrip 10 release coating on epoxy resin core boxes. Use of	678	Diamond honing of injection pump components	380	Display unit. Marconi-Elliott type 928 graphical, and light pen used in conjunction with a computer	750
Danfoss (London), Ltd. Exhibits at Electrex '70 International Electrical Engineers Exhibition	792	Diamond-impregnated dressing roll and drive unit. Triefus type OB	810	Display units for computers. Graphic	749
Orbit motor drive for injection moulding screw	221	Diamond Shamrock Corp. Econo-chrome chromium plating compounds	429	Disposable carbide inserts. Diagrit cutting tools with	770
Dapta-Gear gearboxes. Production of Opperman	202	Diamond wheel. Triefus M170 flared cup	998	Distributor unit for air braking systems produced by gravity die casting. Westinghouse type P4	818
Dayar 1200 adjustable lamp	426	Diamond wheels. Uni-Neven Resimet bonded	190	Dixi & Associates (Machine Tools), Ltd. 27, 101	
Data bank. Applications and advantages of numerical information and, at Ferranti Ltd	163	Diaset pre-setting equipment	965	Do-All Mark II type HC 30A fully-automatic bandsawing machine	838
Data Communications Exhibition	353	Diaset gauging equipment on Newall NC jig borer	965	Dock leveller. Retracta	831
Data handling for computers. The growing importance of graphical	681	Dickinson, G R. Experience in the machining of ultra-high strength steels	175	Doherty, Alfred E., Jr. Metal-working with explosives	417
Data Port portable terminal equipment. Vernitron type DT-104	353	Die and mould handling. Lift truck for Die cast coin-insertion mechanism for slot machine	128	"Doming" equipment. Burflex	672
Data printer. ITT Envoy electronic	285	Die casting activities. Some aspects of Westinghouse	818	Doncasters Moorside, Ltd. Licence to manufacture Tuthill Quick-Seal test unit	77
Data Recording Instrument Co., Ltd. Use of Westwind air-bearing spindles for milling slots in tape recorder heads	731	Die casting. Design development for pressure	307	Doncasters Sheffield, Ltd. Installation of size 4 Massey Hydro-stamp double-acting hammer	651
Datapoint recorder. New Brush	126	Die casting dies. Cooling of	665	Dorky Sales, Ltd.	460
Davis, Stuart, Machines Ltd	981	Die casting foundry for Eire. Ferrous	669	Dormer Taps & Dies, Ltd. Exhibits at Gauge and Tool and Power Press Exhibition	764
Davy & United Engineering Co., Ltd. Progress in metricalation	933	Die casting machine. First Soag-built Wotan-VWF, for export	823		
Dave Instruments Ltd. Low-cost ultrasonic cleaner	528	Die casting machine. Kuz 800-ton cold-chamber	991	Double-A ECM machine. Novel design of Anocut	376
Sound measuring equipment	444	Die casting machines. Filtration of hydraulic fluids on	979	Dough moulding of glass impregnated plastics	744
De Beers Diamond Research Laboratory. RDAR50C diamond abrasive for dry grinding	868	Die casting machines, IDRA 150-ton double-stroke, installed in Walker Crossweller works	826	Dowding & Doll, Ltd. Accuratoor turret lathe with INA Automation loading system	878
Deburring unit. Almco	425	Die casting. Monometer furnaces for aluminium alloys for	990	Accuratoor type 6D programme-controlled automatic-cycle turret lathe	694
Decomat sequence-controlled automatic turret lathe. Manurhin 50 type C	544	Die casting, Production bays for, at the works of Dialoy Ltd	695	Dralim Industries, Ltd. Series 20 control valve	623
Deep-hole boring. Libby lathe adapted for Deep-hole drilling. Jones & Lamson NC turret lathe used for precision	372	Die casting production increased by AMF Versatran robot	825	Draper, D., & Son, Ltd. Exhibits at Instruments, Electronics and Automation Exhibition	917
Deere, John. Bending workpieces four at a time	574	Die casting. The process characteristics of counter-pressure	463	Drawing aid. Marconi precision	675
Deflasher. Burflex bench	272	Die casting variables. Brush system for determining	824	Dresser. Diaform tangent radius wheel	630
Deflashing equipment for rubber mouldings. Air Products Cryo-Trim	510	Die castings. Exhibition of zinc-alloy	989	Dressing roll and drive unit. Triefus type OB diamond-impregnated	810
Delapena Honing Equipment Ltd. Auto-Speedhone machine for honing small parts for hydraulic pumps and motors	492	Die castings, pressure. The functions of overflow wells in	142, 875	Dressing tools. Needle Fliesen diamond	955
Deliveries. Machine tool orders and 7E Feb 4, 8E Feb 18, 5E Apr 8, 637, 718, 759, 796, 919, 5E Jun 24		Die castings, Production of prototype zinc, by the Shaw process	668	Drill. Bahco type B-11N portable pneumatic	655
Delta Machine Tools, Ltd. New Vertomat 8-station rotary transfer machine at SME Show	701	Die filing machine. Producto, adapted for machining graphite electrodes	22	Drill breakage. Norgren impacting jet sensor for detecting, by fluidic means	915
See also	425	Die lubrication system. Improvements obtained with Acheson/Rimrock	312	Drill jig. Wayte "spotting"	626
Demag Material Handling, Ltd. Demag (German) brake motors and Microspeed units	381	Die protection system. Corning fluidic 151, 233, 452		Drilling and boring machines. Tata	414
Demonstration vehicle. Adcock & Shipley-Moog	50	Die set. "British Aero" Maxi Die	776	Drilling and microwelding unit. Laser beam	678
Denis, C. & Co., Ltd. Exhibits at 1st Engineering Design Show	471	Dies. cleaning plastics extrusion, Tecam fluidized bath for	729	Drilling and tapping. Endomatic type MC machine arranged for milling	790
Derby Optical Co., Ltd. Instrument Divn: Type IP18V horizontal optical projector	61	Diodesheim, Maschinenfabrik. Drum-type machine for reaming valve bodies	350	Drilling and tapping machine for Newman motor end frames. Special	552
Deritend Precision Castings, Ltd. Installation of fully-automatic ceramic shell investing plant	713	Dieing presses. Udal hood guard for CVA	610	Drilling and turning some typical sintered ferrous materials	179
Descale metal surfaces. Developments in the Vacnac system of	903	Dielectric fluids for EDM	246	Drilling, boring and tapping machine. Australian Fabromatic unit head	514
Design development for pressure die casting	307	Diesel engine cylinder heads. Pollard rotary transfer machine for marine	62	Drilling by laser beam	671
Destaco type 640 toggle clamp	390	Digipos control. Serck Glocan	741	Drilling, deep-hole, NC turret lathe employed for precision	338
Detector for 3-phase motor faults. Hipex	487	Digital Equipment Co., Ltd. Exhibits at Instruments, Electronics and Automation Exhibition	916	Drilling head. Tata 6-station	416
Detectors. Erwin Sick colour	221	Digital Equipment Co. USA. Solid-state logic modules for machine tool control	611	Drilling holes automatically in gas burners. Worcester Automation special-purpose machine for	106
Dev I Decision Expediter transmitter/receiver unit	356	Digital Equipment Corp. Computer for machine tool control	973	Drilling holes in printed circuit boards. Use of Westwind air-bearing spindle units for	733
E					
Drilling jig. Ajax Hexadrill	901	Digital readout equipment on Harrison L6 centre lathe. Heidenhain LIDA 258, 5E Mar 11, 476	28	Drilling machine. Qualters & Smith type PNC-50-72 NC	587
Drilling machine for flywheels. Bohlins	859	Digital readout facilities. Foster measuring system with	28	Drilling machine, Vero NC, for printed circuit boards	808
Drilling machine. Qualters & Smith type PNC-50-72 NC	587	Digital readout facility for weighing	189	Drilling machine. Wadkin type TH Mark 3NC, installed at Aeronautical & General Instruments	493
Drilling machines. Highly-efficient use of turret-type NC, for operations on castings	562	Drilling, milling and boring machine. Ratier-Forest Polyax type HI NC horizontal-spindle 3-axis	114		

Page	Page	Page	
Drilling, milling, boring and tapping machines. Wadkin "family" of double-column NC	779	Edwards High Vacuum (Plant), Ltd:	
Drilling, milling, tapping and boring machine. Ratier-Forest Polyax type VI NC vertical-spindle	113	Equipment for vacuum impregnation technique for crack detection	90
Drilling of diamond dies. Laser beam	672	Eeseway type SPR and SPRG hardness testers	59
Drilling, reaming, countersinking and tapping machine with feeding table. Steinel multi-spindle	23	Eisele type VMS II-PVX cold sawing machine	269
Drilling set-up. Automatic, with fluidic control	229	Eisner, P K:	
Drilling turbine blades by ECM	50	Group technology and the cell system	277
Drive control. Prosser stepping-motor	186	Ekco Plastics, Ltd:	
Drive for injection moulding screw. Danfoss Orbit motor	221	Moulded nylon contact shoes for motor car distributor units	873
Drive system for NC and copy machining. Hyper-Loop electric servo	916	Elecon, GT, elevator/conveyor system for handling foundry sand	831
Drive system. Hainsworth Speed Ranger	830	Electrex '70 International Electrical Engineers Exhibition	792
Drive. Torq-Matic SCR variable speed	591	Electric air duct heaters. New Eltron	743
Drive unit. Philips type PZ5512/30 enclosed wire	905	Electric motor end frames. Special drilling and tapping machine for Newman	552
Drive units. Heenan VH 41 and VH0 21 variable-speed	792	Electric motor faults. Hipex detector for 3-phase	487
Drives. friction, "Sticky" lubricant for use with	70	Electric motors. Demag, and Microspeed units	381
Drivematic positioner. Rohr 6-axis Droop & Rein FPK 160/2 copy milling machine. Large	735	Electrical and chemical machining methods	212, 242, 288
Drum-type machine for reaming valve bodies. Diedesheim	350	Electrical discharge grinding	212
Drums. Welding of, on Lincoln Electric automatic submerged arc welding plant	587	Electrical discharge machining	212
Du Pont Co:		Electrical discharge machining. Advances in	242
Immersion heat exchanger for plating tank		Electrical Vehicle Association of Gt. Britain, Ltd:	
Thermal exhaust manifold reactor	638	Exhibits at Electrex '70 International Electrical Engineers Exhibition	792
Duckhams Oils:		Electro-chemical discharge grinding	213
Aquisulf 10 soluble cutting oil	178	Electro-chemical grinding and honing	213
Dufour type 161 CS automatic-cycle milling machine	315	Electro-chemical machine. Novel design of Anocut	376
Dunbar & Cook, Ltd:		Electro-chemical machining. Advances in	212, 214, 242, 288
Automatic-cycle axle casing lathe	115	Electro-chemical machining installation at Rolls-Royce Bristol Engine Division. Large	42
Dunlop & Ranken, Ltd:		Electro-chemical machining of gas turbine components	42
New Wolverton stock-holding centre	995	Electro-chemical marking machine. Pryor automatic	581
Dust collection unit. Linisher band grinding machine with built-in	100	Electro-Dynamic Construction Co, Ltd:	
Dust Control Equipment, Ltd:		50th anniversary	197
Exhibits at Mechanical Handling Exhibition	833	Electro-Grind rotary and indexing electro-lytic grinder. Ernst	661
Drytex DT6 unit dust collector incorporated in Linisher band grinding and polishing machine	100	Electro-magnetic clutches and brakes. Boost units for use with Westool	743
Dyna-Torq clutch/brake assembly. New Dynaflex, Ltd:		Electro-optical and associated equipment. Exhibition of	678
Fluid storage and dispensing equipment	701	Electrode materials for EDM	248
Dynamometers. Wasa range of hydraulic Dyson (Diecastings), Ltd:	673	Electrode wear in EDM. Reduction of	245
Die cast coin-insertion mechanism for slot machine	989	Electrodes, coated. Production of	889
E		Electroktm machine installed at Rolls-Royce Bristol Engine Division. Cincinnati	44
ECM. Advances in	212, 242, 288	Electrolytes for ECM	292
ECM. Drilling turbine blades by	50	Electrolytic grinder. Ernst Electro-Grind rotary and indexing	661
ECM installation at Rolls-Royce Bristol Engine Division. Large	42	Electron beam machining	215
ECM machine structures. Cement cladding for	376	Electron beam welded bi-metal strip	227
ECM machine. Novel design of Anocut	376	Electron attachment for centre finding in operation on DEA Beta 3D inspection machine	58
EDC machine tool report	476	Electronic control equipment for flying shears. Allen West	972
EDM. Advances in	242	Electronic gauging system. Multi-channel unit for Mercer 155	811
EDM equipment. Cincinnati Cintrojet solid-state power supply unit for use with	855	Electronic readout equipment. Heidenhain LIDA, for a Harrison L 6 centre lathe	258, 5E Mar 11, 476
EMI-MEC automatic lathes of 1½ and 2-in bar capacity. Nickols	914	Electropolishing	214
EST-Churchill, Ltd:			
Exhibits at Gauge and Tool and Power Press Exhibition	769	Electropower Gears, Ltd:	
Ealing, Beck- optical bench	306	Exhibits at Mechanical Handling Exhibition	832
East German NC lathe. Demonstrations of type DF 315 LNC	458	Gear reducers with hydraulic driving motors	54
Eaton Yale & Towne Inc:			
Industrial Truck & Hoist Divn: New Yale 3-wheel lift truck	895	Electrosil, Ltd	151, 233, 452, 699
Econ-O-Centre NC turret-type machining centre. Newall-Burgmaster	188	Electrostatic microfilm reader/printer. CAPS	751
Econo-chrome chromium plating compounds	429	Electrostream method of ECM	213
Eddy-current coupling. Heenan VH021	182	Elevator/conveyor system for handling foundry sand. GT Elecon	831
Eddy-current system for the non-destructive measurement of induction hardened layers. NOIE	513	Elga Hydroshear guillotine shearing machine. Work support unit for	828
Ede, Prof. A J:			
Some aspects of SI and its use	73	Elga Notchomatic corner notching machine	629
Edwards, F J, Ltd	105	Elgar Machine Tool Co, Ltd	211
Edwards, G A B:			
Group technology and the cell system	317, 757	Elliott-Automation Control Valves, Ltd:	
		Fisher Governor Divr	
		Group technology and machining cells in the small-batch production of valves	2
		Elliott Machine Tools, Ltd:	
		Extended range of "modular cube construction" milling machines	68
		Milmor milling machine with copying equipment	580
		Elliott Mechanical Automation, Ltd:	
		Installation of fully-automatic ceramic shell investing plant at Deritend	713
		Ellison, G G, Ltd:	
		Tell-Tale filters for hydraulic systems of die casting machines	979
		Eltron (London), Ltd:	
		New electric air duct heaters	743
		Embassy Machine & Tool Co, Ltd:	
		Exhibits at International Wire Exhibition	944
		Encapsulating machine for coils. Watford Electric	744
		End mill. Brooke-Strasmann shell milling cutter and	772
		Endomatic type MC machine arranged for milling, drilling and tapping	790
		Engine, aircraft, fixture parts. Abwood rotary table surface grinder for operations on	228
		Engine components. Machining jet, on VDF NC lathes	111
		Engine rocker shaft assembly incorporating four sintered shaft support brackets. BLMC	752
		Engines for the Maxi car. Production, assembly and testing of 1485-cc E-series	402
		Engines. Gauge for use in timing motor car	938
		Engineers (Sutton), Ltd:	
		Hydraulic shock absorber	624
		Engineering & Scientific Equipment, Ltd:	
		Eseeway type SPR and SPRG hardness testers	59
		Engineering Design Show and Conference. 1st	470
		Engineering Inspection and Control Exhibition. 3rd	55
		Engis, Ltd:	
		Exhibits at International Wire Exhibition	946
		English Electric-AEI Industrial Controls, Ltd:	
		Instabrade Mark V dc injection braking unit	331
		English Numbering Machines, Ltd:	
		Series 436 predetermining mechanical counters	21
		English Steel Corporation:	
		100-ton steel casting for tyre for rotary cement kiln	116
		Enots, Ltd:	
		New pneumatic impulse generator	549
		3-way exhausting valve	185
		Envoy electronic data printer. ITT	285
		Epoxy powder. Telcoset 401/E rapid-curing	107
		Epoxy resin core boxes. Use of Dagstrip 10 release coating on	678
		Epoxy resin. Stators insulated with powdered	11
		Equal Pay Act. Some implications of the	601
		Equi-Spacer attachment. The Carlisle	269
		Ernault-Somua, H, SA:	
		New range of heavy-duty double-column plano-milling machines	756
		Ernst Co:	
		Electro-Grind rotary and indexing electrolytic grinder	661
		Erwin Sick:	
		Colour detectors	221
		Eseeway hardness testers	59
		Estimating cycle times for NC machining. A method of quickly	134
		Ether, Ltd:	
		Programme control equipment on Gate Winchester 125 hydraulically-operated capstan lathe	148
		Eubanks Engineering Co:	
		High-speed electronically-controlled wire cutting and stripping machine	795
		Type 88 stripping machine for fine wire	395
		European Communities. Britain and the	361
		Eutectic Co, Ltd:	
		Hard-facing treatment for wire guide rollers	88
		Use of injection plungers faced with bronze	387
		Xyon 2-44 electrode used in repair of gearbox housing cover by low-temperature arc welding	130
		Ex-Cell-O Corp (England), Ltd:	
		New range of fine boring machines	553
		Projector tracer for contour inspection	666
		Exhaust manifold reactor. Thermal	637
		Exhausting valve. Enots 3-way	185
		Exhibition centre. The national	201, 318
		Exhibitions:	
		Computer Graphics '70	749
		Data Communications	353
		Electrex '70 International Electrical Engineers	792
		Electro-optical and Associated Equipment	678
		Engineering Design. First	470
		Engineering Inspection and Control. Third	55
		French Machine Tool. Sixth	542

Page	Page
Gauge and Tool and Power Press	762, 808
Instruments, Electronics and Automation	914
International Wire, Second	944
Mechanical Handling	830
Physics, 54th	512, 539
Power Press	774, 814
SME Tool Exposition	854
Welding Engineering	905
Zinc Alloy Die Casting	989
Expanding large pipes by water pressure	862
Explosive bonding	419
Explosives, Metal-working with	417
Exports and imports of used machine tools	8E Jan 7, 8E Feb 11, 8E Mar 11, 8E May 6, 8E May 13, 7E Jun 3, 78, 7E Feb 25, 8E Mar 18, 7E Apr 29, 7E May 27
Classified: Facing pages	160, 320, 480, 760, 880
Exports, U S machine tool	8E Jan 28, 398, 8E Mar 4, 5E May 13, 8E Jun 3
Extruded half-shafts, 1000 cold-, per shift	430
Extruded-section aluminium trip-plate	412
Extrusion, Aluminium, and foil rolling	889
Extrusion presses, Rhodes horizontal impact	140
F	
FR Electronics solid-state relays	395
Fabricmatic 30/30 NC hole punching and notching machine, Strippit	827
Fabre Engineering Pty, Ltd:	
Fabromatic unit-head machines	514
Facing and boring head, Smith BoreMat	31
Facing, Hard-, treatment for wire guide rollers	88
Factored Machine Tool Divn. of Newall Engineering Co, Ltd:	
Activities of the Division	340
Factory for BSA Sintered Components, New	136
Fairnir Bearing Co, Ltd:	
"Open forum"	557
Failure predicted by very high frequency vibration	899
FANUC NC systems, Fujitsu	91, 93, 95
FANUC System-K and System T installations under direct computer control, Fujitsu	427
Farmer, Sir James, Norton & Co, Ltd:	
Hydrowire wire extruder employing hydrostatic pressure	946
Farnsworth, G H:	
Concrete in machine tools	703
Farris Engineering Corp, USA	2
Fascold core-making machine	900
Fazakerley, G M:	
Group technology and the cell system	836
Federal Die Casting Co:	
Ferrous die casting foundry for Eire	669
Federal-Mogul Corp	730
Federal Products Corp:	
Type 136B-2 horizontal comparator for checking plug and ring gauges and setting masters	769
Feed-rate coding for Bendix NC system	37
Feeds, SPS Presto single and double roll	268
Feeder, INA vibratory bowl, with "silo" attachment	830
Feeding units, Track-mounted, for stamping presses	573
Feet for machines, Carry-set	347
Fencing for machine tools, "Instanter" guard	90
Fenner, J H, & Co, Ltd:	
Hainsworth SpeedRanger drive system	830
Ferranti, Ltd:	
Advanced ideas for production in the 70s	162
Installation of new Polygram shell moulding machine	638
Use of plates for producing prototype parts under NC	962
Automation Systems Divn:	
Exhibits at Computer Graphics 70	750
Production cell	162
Use of Molins System 24 machine	162
Ferrous die casting foundry for Eire	669
Ferrous materials, sintered, Turning and drilling some typical	179
Filament winder, Goldsworthy type QCM-10A	421
Filing machine, Producto die, adapted for machining graphite electrodes	22
Films:	
Production of gas cookers (A R O Machinery)	357
Die casting under robot control (AMF Versatran)	8E Apr 22
High quality steels (Firth Brown) 8E Mar 11	
Keys to metrification (Metrification Board)	8E Mar 25
Vaun/Bodine assembly machine (Vaughan Associates)	956
Filter, Flo-Dri compressed air	339
Filter spray booths, Volspray "Metric" dry	50
Filtration of dielectric fluids and organic solvents, Metalfilter	316
Filtration of hydraulic fluids on die-casting machines	979
Fimitol P-A-3 cutting fluid	76
Fine-boring machines, Herbert Ultrafine range of	592
Fine-boring machines, New range of Ex-Cell-O	553
Fine-boring unit, Boneham & Turner	812
Fine, L:	
Metal removal by skiving on turning machines	362
Fingers, Flexi-Grip mechanical	510
Finishing, mirror-, light alloy materials, Diamond fly-cutting for	731
Firth Brown, Ltd:	
Film: High quality steels	8E Mar 11
Firth Brown Tools, Ltd:	
Exhibits at Gauge and Tool and Power Press Exhibition	763
Fisher Controls Co, USA	2
Fitex cleaning and polishing cloths	991
Flame cutting machine, AGA Curvator portable	274
Flame hardening, Inductoheat universal work handling unit for induction and Flaplock guard for power press, Price Flaplock side-swing press guard, Price	28, 816, 664
Flaw detection equipment, Ardrox automated	141
Flexi-Grip mechanical fingers	510
Flight Refuelling, Ltd:	
FI Electronics Divn:	
Solid-state relays	395
Flo-Dri compressed air filter	339
Flotation, Air, of fixtures and machines	480
Floating fixtures improve machine productivity	490
Flow line at Richard Berry for production of cold-extruded workpieces	430
Flow line practice at the works of Turner Mfg Co, Ltd	722
"Flow line" system applied to the production of hot water mixing valve components	482
Fluid logic banks, Maxam introduce modular	678
Fluid logic equipment, Developments in: Corning fluidic sensing units	699
Corning fluidic time-delay relay unit	701
Norcon valves for controlling hydraulic oil from fluidic signals	696
Norgren Fluidics multi-position selector valves	697
Norgren Fluidics process monitoring and audible alarm systems	697
Norgren Fluidics ultra-sensitive valve operating unit	699
Plessey fluid logic integrated control circuit	696
Plessey Logi-Pak fluid logic system	696
Fluid/mechanical coupling, Aurora Jolly-type	218
Fluid storage and dispensing equipment, Dynaflex	701
Fluidic control, Automatic drilling set-up with	229
Fluidic die protection system, Corning	151, 233, 452
Fluidic/hydraulic interface servo-valves, Moog	624
Fluidic means, Norgren impacting jet sensor for detecting drill breakage by	915
Fluidic object detection system, Plessey	26
Fluidic strainer, Sericlean self-cleaning	74
Flute, tap, grinder, Junker type NAJ 11 automatic	108
Fly-cutting, Diamond, for mirror-finishing light alloy materials	731
Flying shears, Allen West electronic control equipment for	972
Flywheels, Bohlins drilling machine for	859
Folsom-Wycliffe Foundries, Ltd:	
Penetrated steel instead of high-nickel alloys	110
Ford Motor Co, Ltd:	
Large warehouse with computer control	174
Installation of 2-station Massey-Schlatter cold forging press	653
Progress in metrification	935
Forest Polyax NC milling, drilling and boring machines, W E Norton demonstrate	113
Forrest type OR 500 NC milling machine	583
Forging, Massey presses for hot and cold	651
Forging, Rotary	538
Forging, Sintered preforms for	277
Forging technique improves ball-bearing life	648
Forging, w.c.m., Some developments in	841
Forgings replaced by sintered parts	394
Form grinding, Application of single-pass tangential	782, 802
Formica, Ltd:	
Formica fabrication service	397
Forming gear blanks, Cold, on a transfer press	690
Forming machines, Exceptionally large National-Kayser cold	574
Forming of steel plates, Bronto rolls for cold and hot	77
Forming press, George Jones 500-ton	27
Forming technique, Axial	649
Formulator, The Temco	807
Forsyth Presses, Ltd:	
Examples of special-duty hydraulic presses	529
Foster, H Dell, Co:	
Measuring system with digital read-out facilities	28
Fothergill & Harvey, Ltd:	
Carbon-fibre materials	923
Carbomorph woven carbon fibre fabric	996
Foundry, Ferrous die casting, for Eire	669
Foundry, New GKN automated	88
Frames, electric motor end, Special drilling and tapping machine for Newman	552
Fraser, Andrew, & Co, Ltd:	
Fraser K & L range of proportional hydraulic control valves	198
Frederick, A:	
Group technology and the cell system	198
French Machine tool Exhibition, 6th	542
Friction welding demonstration, Caterpillar inertia	858
Friden, Inc:	
Collectadata type 30 equipment	355
Friden, Ltd	355
Fuel element cans, The Hobson production centre for	782, 802
Fujitsu FANUC System-K and System T installations operated under direct computer control, 7-machine	427
Fundamentals of wear	169
Furnace controller, Torvac type 3	908
Furnace for melting iron, Monometer 50-ton capacity rotary	540
Furnace, Monometer mini rotary	946
Furnace, New vacuum, installed by Nemo Heat Treatments	438
Furnace, Torvac series 24 vacuum	36
Furnaces for die casting, Monometer	990
Fusing nylon to metal by induction heating	296
G	
GEAPT computer language	470
GEC Transmission Divn:	
Installation of ultrasonic cleaning plant for printed circuit production line	117
GEIS, Ltd:	
GEAPT computer language	470
GKN automated foundry, New	88
GKN Bolts & Nuts, Ltd:	
Coarse- or fine-pitch metric threads	457
GKN Screws & Fasteners, Ltd:	
Exhibits at 1st Engineering Design Show	471
Engineering Manufacturing Divn:	
Installation of Heinemann NC lathe with AUTOPOL	51
GKN Shardlow Metrolgy, Ltd:	
Exhibits at Gauge and Tool Exhibition	813
GMC Truck and Coach Divn, Pontiac:	
Universal power chucks facilitate small batch production	860
GT Elecon elevator/conveyor system for handling foundry sand	831
Galtona Slimlock face milling cutters	997
Gamma-coated carbide, Sandvik Coromant	702
"Gantry mill", Schiess	568
Gantry-type loader, Transamatic	928
Gas bearings, The application of high performance	499
Gas burner, BP multigas diffusion flame	540
Gas burners, drilling holes in, Worcester Automation special-purpose machine for automatically	106

Page	Page				
Gas heating system. The Blu-Surf	468	Giddings & Lewis-Fraser, Ltd:	Page		
Gas turbine components. Electro-chemical machining of	42	Endomatic type MC machine arranged for milling, drilling and tapping	790	Grinding machine. Jones-Shipman type	Page
Gate Machinery Co, Ltd:		Qualification of the terms "accuracy" and "repeatability" for NC positioning	869	1411 SFT surface	435
Machine tool demonstration	148	Type 70a-E4-T horizontal boring and		Grinding machine. Juaristi universal	151
Gauge and Tool and Power Press		milling machine installed at Hamworthy Engng.		Grinding machine. Junker type NAJ 11	
Exhibition	762, 808	automatic tap flute		automatic tap flute	108
Gauge for continuous measurement of hot-rolled rod. Optical	70	Grinding machine, Linisher band, with		Grinding machine, Linisher band, with	
Gauge for large diameter grooves and recesses. Mueller	712	dust collection unit		dust collection unit	100
Gauge for measuring the diameter of a hot bar. BISRA non-contact	513	Grinding machine. Nova type 10/135E		Grinding machine. Nova type 10/135E	23
Gauge for tyre moulds. Benda	126	internal		Grinding machine. Rebuilt Newall type	
Gauge for use in timing motor car engines	938	GAC crankpin		HAC crankpin	341
Gauge. Hamilton Kwik-Chek dial-indicator	194	universal		Grinding machine. Ribon Mark 2	
Gauge. Mitutoyo series 515 Height Master micrometer height	917	Grinding machine, Thompson-Matrix		Grinding machine. Ribon Mark 2	151
Gauge. Netherlands beta-radiation thickness	539	surface, with Tenth Matic control		Grinding machine, Thompson-Matrix	
Gauge. Solex air, for measuring flow restriction in cigarette filter rod	811	system for down feed		surface, with Tenth Matic control	992
Gauges. IEC ball-ended plug	647	Grinding machine. TOS Hostivar type		system for down feed	
Gauging equipment for checking internal and external dimensions on automatic transmission housings. Benda	795	BX 50		Grinding machine. TOS Hostivar type	215
Gauging equipment. Sigma. Improved facilities for production and sale of		Grinding machine. Vilar type 205 heavy-duty tool and cutter		Grinding machine. Vilar type 205 heavy-duty tool and cutter	548
Gauging system. Mercer 155 electronic		Grinding machine. Vilar type 210 optical profile		Grinding machine. Vilar type 210 optical profile	548
New multi-channel unit for		Grinding machine. Ward Cutter Master		Grinding machine. Ward Cutter Master	
Gauging units and control modules. System E column	998	No 1 tool and cutter		No 1 tool and cutter	766
Gear blanks. Cold forming, on a transfer press	777	Grinding machines. Kapp spline		Grinding machines. Kapp spline	629
Gear blanks. Machining, on an Amtex-New Britain chucking automatic	690	Grinding machines. Rosa cross-traversing wheelhead surface		Grinding machines. Rosa cross-traversing wheelhead surface	876
Gear cutting and hob sharpening machines. New Mikron	545	Grinding Marwin spiral carbide cutters on Ward machines		Grinding Marwin spiral carbide cutters on Ward machines	255
Gear lubricants. New Transgard open	657	Grinding operation. An unusual spline		Grinding operation. An unusual spline	980
Gear reducers with hydraulic driving motors. Electropower	729	Grinding operations. chamfer, Schaffner		Grinding operations. chamfer, Schaffner	
Gear section at the BLMC Cotton Hackett plant	54	milling machine modified for		milling machine modified for	632
Gear unit for operation in an aluminium smelter. Electropower "shovel-mounted" motorized	602	Grinding, tangential form, Application of		Grinding, tangential form, Application of	782
Gear units. Efficient production of	832	Grinding wheel dresser. Diaform tangent radius		Grinding wheel dresser. Diaform tangent radius	630
Gear, worm-, reduction units. Producing the range of Radicon	202	Grinding wheel forming machine. Monahobson		Grinding wheel forming machine. Monahobson	787
Gears and threads. Hobormill machine for hobbing and milling	882	Grinding wheel profiling tool. Triform		Grinding wheel profiling tool. Triform	272
Gears. Automatic pot broaching of external splines and	344	Grinding wheels. Largest, so far made in one piece		Grinding wheels. Largest, so far made in one piece	138
Gears for printing machine. Nyronic	654	Grinding wheels. Nortex colour-coded		Grinding wheels. Nortex colour-coded	693
Gears. Inserted tooth construction for large	24	Grinding wheels. Uni-Neven Resimet bonded diamond		Grinding wheels. Uni-Neven Resimet bonded diamond	190
Gears. Sintered oil pump	457	Grinding with wide abrasive belts		Grinding with wide abrasive belts	863
Gearaide, Ltd:		Grooves and recesses. Mueller gauge for large diameter		Grooves and recesses. Mueller gauge for large diameter	712
Conversion equipment for capstan lathe to provide tapping facilities		Group technology and machining cells in the small-batch production of valves		Group technology and machining cells in the small-batch production of valves	2
Gearbox casing halves. Machining tests on die cast	988	Group technology and the cell system		Group technology and the cell system	
Gearbox. Geartech type U miniature	184	81, 156, 197, 275, 317, 635, 757, 836, 876		81, 156, 197, 275, 317, 635, 757, 836, 876	
Gearbox housing cover repaired by low-temperature arc welding	130	Group technology. Application of, at Serck		Group technology. Application of, at Serck	
Gearbox shift rails. Hoffmann transfer line for producing	383	Audco		Audco	82
Gearboxes for commercial vehicles. Manufacture, assembly and testing of	722	Group technology applied to the production of hot water mixing valve components		Group technology applied to the production of hot water mixing valve components	482
Gearcases. Production of Opperman Dapta-Gear	202	Groves, Samuel, & Co, Ltd:		Groves, Samuel, & Co, Ltd:	
Geartech, Ltd:		Use of Rocol RL-5 for a difficult		Use of Rocol RL-5 for a difficult	
Type U miniature gearbox	184	press operation		press operation	517
General Broach & Engineering Co:		Guard fencing for machine tools.		Guard fencing for machine tools.	
Vertical hydraulic machines for automatic pot broaching of external splines and gears	654	"Instanter"		"Instanter"	90
General Dynamics Corporation Convair Divn	190	Guard for power press. Price Flaplock		Guard for power press. Price Flaplock	817
New air bearing for floating fixture		Guard on 250-ton press. Maxam step-up relay used in conjunction with		Guard on 250-ton press. Maxam step-up relay used in conjunction with	181
General Electric Co, U S A:		Guard, Udal hood, for CVA dieing presses		Guard, Udal hood, for CVA dieing presses	610
Aircraft Engine Group:		Guards. Price Flaplock press		Guards. Price Flaplock press	664, 816
Use of toroidal cutters for NC contouring operations on titanium	413	Guardian Industrial Products:		Guardian Industrial Products:	
General Motors Corp, U S A:		New Transgard open-gear lubricants		New Transgard open-gear lubricants	729
Steel scrap reclamation process	587	Guillotine shears. Bombed type 209KH and 209DA		Guillotine shears. Bombed type 209KH and 209DA	545
Buick Motor Divn		Gun, Abnox blow, with air shield		Gun, Abnox blow, with air shield	347
Automatic pot broaching of external splines and gears	654				
Truck and Coach Divn. Pontiac:					
Universal power chucks facilitate small batch production	860				
General Motors, Ltd:					
AC-Delco Divn:					
Some experiences of mechanized assembly	642				
Generator. New Enots pneumatic impulse	549				
Geometric Co (Wednesbury), Ltd:					
Fully-automatic bar-pointing and chamfering machine	675				

H

HCF (Turrets), Ltd	
Talstock turret head	100
Habit Diamond Tooling, Ltd:	
Exhibits at Gauge and Tool and Power Press Exhibition	771
Hahn & Kolb (Gt Britain), Ltd	393, 738
Hahn & Kolb rotary transfer machine for operations on cylinder lock bodies	393
Hahn & Kolb Variomatic 9-station rotary transfer machine installed at the works of W Lucy & Co	738
Hainsworth SpeedRanger drive system	830
Hall & Pickles, Ltd:	
Exhibits at Gauge and Tool Exhibition	813
Hall Engineering, Ltd:	
Installation of large Droop & Rein copy milling machine	210
Hamilton Watch Co:	
Instruments Divn:	
Kwik-Chek dial-indicator gauge	194
Hamworthy Engineering, Ltd:	
Savings with the use of an NC horizontal boring and milling machine	682
Hancock Han-Co-Ordinate oxygen profiling machine	32
Handle. Bristol Repetition clamping	594
Handling dies and moulds. Lift truck for	128
Handling of workpieces. Precision	928
Handling, materials, for automation shop	
Efficient	208

Page	Page
Hard-facing treatment for wire guide rollers	88
Hardening. Induction or flame, Indutelec universal work handling unit for	28
Hardening. Shock	420
Hardinge Machine Tools, Ltd:	
Tool pre-setting equipment on turret lathes installed at Reliance Gear	448
Hardness tester, Wilson Rockwell, with digital read-out	580
Hardness testers. Eseway SPR and SPRG	59
Hardness testers for plastics and rubbers, Wilson	528
Harris College, Preston:	
Concrete in machine tools	703
Harrison, McGregor & Guest:	
Spot welding operations on tractor bonnets	234
Harrison, R:	
Group technology and the cell system	276
Harrison, T S, & Sons Ltd:	
L 6 centre lathe equipped with Heidenhain LIDA electronic readout equipment	258, 5E Mar 11, 476
Hawker Siddeley Aviation, Ltd:	
Experience in the machining of ultra-high strength steels	175
Hawker Siddeley Dynamics, Ltd:	
Equipment for electron beam welding bi-metal strip	227
See also	814, 826
Hawkyard, J B:	
Bubble-casting aluminium containers	475
Hayes, J H, C Eng, F IMech E, F I Prod E, F I L:	
Technical translations - a still much misunderstood engineering and sales tool	71, 198, 396
Head, HCF tailstock turret	100
Head, Smith BoreMat boring and facing	31
Head, tapping, Meddings type HTH25 pitch-controlled	105
Heads and spindles. Extended range of Wright grinding	154
Heads, unit, Herbert Servomatic quill-feeding and slide-base type	66
Heading, cold, and thread rolling machines, New Waterbury Farrel	264
Headland, Thos P, Ltd	415
Headland, Thos P, (Machine Tools) Ltd:	
Exhibition at Gt Yarmouth	836
See also	347
Head Machine Co:	
Bore-Matic 3515 vertical-spindle boring machine	152
Heat exchanger for plating tank, Du Pont immersion	638
Heat sink component, Deeply-flinned, produced by gravity die casting	822
Heat treatment plant installed at Opperman Gears	996
Heaters. New Eltron electric air duct	743
Heating system. The Blu-Surf gas	468
Heenan & Froude, Ltd:	
VHO21 eddy-current coupling	182
Heenan VHO41 and VHO21 variable speed drive units	792
Heidenhain, Dr Johannes:	
LIDA electronic readout equipment for Harrison L 6 centre lathe	258, 5E Mar 11, 476
Measuring bench for checking large vernier calipers, etc	60
Optical measuring equipment incorporated in Kelch tool pre-setting equipment	127
Heidenhain (GB), Ltd	60, 127, 263, 5E Mar 11
Height Master micrometer height gauge. Mitutoyo series 515	917
Heinemann type DN 300 NC lathe with AUTOPOL. GKN use	51
Heligear reduction unit. Production of components for the Opperman	202
Heller turret-type NC drilling machines installed at W Lucy & Co	562
Henderson & Keay (Engineering), Ltd	542
Hepworth & Grandage:	
Installation of fully-automatic inspection fixture for checking the radial thickness of piston rings	554
Heworth Iron Co (Engineering), Ltd:	
Dialset equipment on Herbert Monoslide lathe	670
Herbert Boring & Drilling, Ltd:	
British-built Anocut Double-A ECM machine	376
Servomatic quill-feeding and slide-base type unit heads	66
Ultrafine range of fine-boring machines	592
See also	42
Herbert-BSA, Ltd:	
Demonstration set-up on Herbert Cri-Dan type CT high-speed copying and thread-chasing lathe	66
Use of Schaudt NC angular-head grinder for lathe spindles	223
Herbert Controls & Instruments, Ltd:	
Exhibits at Electrex '70 International Electrical Engineers Exhibition	793
Improved facilities for production and sales of Sigma gauging equipment	998
Sigma 8-channel electronic edgewise indicator	55
Herbert Group:	
Machine tool exhibition	66
Monoslide lathe converted for automatic operation with Dialset equipment	670
Turret lathe with Nickols programme control and automatic handling equipment for spindle components	486
Herbert Small Tools & Equipment, Ltd:	
400 vertical-beam optical projector	55
Hestair Sherpa, Ltd:	
Exhibits at Mechanical Handling Exhibition	833
Hexadrill drilling jig, Ajax	901
Hi-Ton Machine Tools, Ltd:	
Verti-Broach vertical broaching machine	585
High Shear milling cutters, Prolite	956
Hilgers NC and large-capacity tube bending machines	230
Hillman Avenger car. 1000 cold-extruded half shafts per shift for the Hipex Electrics:	
Detector for 3-phase motor faults	487
Hispano-Suiza Albus universal tool and cutter grinder	22
Hispano-Suiza Righi programme-controlled lathe installed at Aeronautical & General Instruments	494
Hitachi, Ltd:	
10-machine computer-controlled machining installation	429
Hitachi Seiki Co, Ltd:	
Type 6MB machining centre	93
Hob design by computer	947
Hob design. Optimization of, for maximum accuracy	947
Hob sharpening machines. New Mikron gear cutting and	657
Hobart Bros AG:	
Micro-wire welding unit	798
Hobart Bros (Gt Britain), Ltd	798
Hobbing and milling gears and threads. Hobormill machine for	344
Hobormill machine for hobbing and milling gears and threads	344
Hobson, H M, Ltd:	
Production centre for fuel element cans	782, 802
Hoffmann, Kurt:	
Transfer line for producing gearbox shift rails	383
Hogan AB:	
Turning and drilling some typical sintered ferrous materials	179
Hoist, King type M250 2-speed	555
Hojalat y Lamina SA:	
Installation of Monometer 50-ton rotary furnace for melting iron	540
Hole punching and notching machine. Stripit Fabramatic 30/30 NC	827
Holes in gas burners. Worcester Automation special-purpose machine for automatically drilling	106
Holes in metal parts. sizing and surface-finishing. Application of Ballizing - a technique for	388
Holms, S, Maskinfabrik:	
Multimatic II machining centre	33
Honing, Diamond, of injection-pump components	380
Honing machine. Chaphone vertical	349
Honing of small parts for hydraulic pumps and motors. Automatic	492
Honing operation. An unusual	909
Hook load indicator". Wylie	532
Hopper loader. Aylesbury Automation type 25L elevating	103
Horrocks, D:	
Bubble-casting of aluminium containers	475
Hose production. Effective applications of Wickman automatics in, at the works of Super Oil Seals & Gaskets	207
Hostivit type BB-08 centreless grinder	423
Hostivit type BX 50 grinding machine	215
Hot and cold forging. Massey presses for	651
Hot bar. BISRA non-contact gauge for measuring the diameter of a	513
Hot riveting machine built by RHP	511
Hot-rolled rod. Optical gauge for continuous measurement of	70
Hot rolling, Redman machine for producing pre-forms by, from bar material	810
Hot water washer. Kismet Champion high-pressure	118
Hot working of chromium-nickel base alloys. Developments in	734
Houdaille Industries, Inc:	
Di-Acro Divn:	
Type 20 NC turret punch press	139
Hounsell, John, (Engineers), Ltd:	
40-ton high-speed hydraulic press	102
Hunter, G, (London), Ltd:	
Retracta dock leveller	831
Huron type MU6 CNC milling machine	313
Hydra-Point machining centre with auto tool change. Moog	472
Hydraquip, Ltd:	
Hyvarmill 60-hp heads used to convert planing machines for plano-milling at the works of H W Ward	874
Hydrashear guillotine shearing machine. Work support unit for Elga	828
Hydraulic clamping. Turning fixture with built-in	607
Hydraulic control valves. Fraser K & L range of proportional	198
Hydraulic dynamometers. Wasa range of	673
Hydraulic equipment for work clamping and support. Power Jacks	773
Hydraulic equipment. New Lucas	185
Hydraulic fluids. Filtration of, on die casting machines	979
Hydraulic, fluidic/, interface servovalves. Moog	624
Hydraulic jacks. Webtool	664
Hydraulic motor. Staffa B10	343
Hydraulic power pack. Olin Mathieson air-operated	489
Hydraulic press brake. Bronx 165-ton	777
Hydraulic press. Bronx 300-ton portal-frame	796
Hydraulic press. Hounsell 40-ton high-speed	102
Hydraulic press. Whitney 150-ton portable	462
Hydraulic presses. Examples of Forsyth special-duty	529
Hydraulic pumps and motors. Automatic honing of small parts for	492
Hydraulic pumps. Improved facilities for the production of	391
Hydraulic shock absorber	624
Hydraulic systems. Use of one oil for lubrication and	492
Hydraulic tube bending machine. Addison Universal 60	105
Hydraulically-operated capstan lathe. Gate Winchester 125, with Ether programme control	148
Hydrostamp double-acting hammer. Massey size 4	651
Hydrostatic bearings and drive. A precision lathe with	618
Hydrostatic bearings. Design of opposed-pad, for machine tool slideways	407
Hydrostatic journal bearings. Design of conical	250
Hydrowire wire extruding machine employing hydrostatic pressure. Farmer Norton	946
Hyttern Controls, Ltd:	
New Dyna-Torq clutch/brake assembly	717
Hyper-Loop Inc:	
Electric servo drive system for NC and copy machining	916
Hyster Overseas:	
Hyster-Ransomes battery-operated reach trucks	789
Hyvarmill-converted planers at the works of H W Ward & Co	874
IBM. Production of prototype zinc die castings by the Shaw process at	668
ICI exhibits at 1st Engineering Design Show	471
IDRA 150-ton double-stroke die casting machines installed at Walker Crosswell works	826
IGE (Control Equipment), Ltd:	
Improved Masterotor press control equipment	755
ILC. Assistance afforded by Coventry	257
ILZRO 12 zinc alloy for die casting	668
INA Bearing Co, Ltd:	
Needle bearings for Matrix clutches	312
INA Automation Divn:	
Loading systems for Accuratoool turret lathes	878
Vibratory bowl feeder with "silo" attachment	830

Page	Page
ITT Creed:	
NC applied to large batch production	282
Idiom display and information input/output equipment with programmable memory	752
Illoquench synthetic quenching fluid	337
ILZRO 12 zinc alloy for die casting	668
Immersion heat exchanger for plating tank.	
Du Pont	638
Impact extrusion press. Rhodes horizontal	140
Imports of machine tools.	
British	78, 7E Feb 25,
8E Mar 18, 7E Apr 29, 7E May 27	
Classified:	
Facing pages 160, 320, 480, 760, 880	
Imports of used machine tools	
8E Jan 7, 8E Feb 11,	
8E Mar 11, 8E May 6, 8E May 13, 7E Jun 3	
Impregnated Diamond Products Ltd:	
Uni-Neven Resimet bonded diamond wheels	190
Impregnation technique, Vacuum, for crack detection	90
Impulse generator. New Enots pneumatic	549
In-process control when turning on 6-ft diameter rolls. Cantilever-type structure made from carbon fibre rods forming part of equipment for	59
Indexable tip tools. Prolite type C-L	904
Indexing and positioning. Demag Microspeed unit for high-accuracy	381
Indexing attachment. The Carlisle Equi-Spacer	269
Indexing electrolytic grinder. Ernst Electro-Grind rotary and	661
Indexing fixtures for air-motor rotors. Special	206
Indexing fixture. Bristol Erickson automatic	557
Indexing table. Moss 360-station	488
Indicator. Sigma 8-channel electronic edgewise	55
Indicon Automation, Ltd:	
Indicon-R position indicating equipment for Moore No 3 jig borer	197
Indicon-R position indicating equipment	917
Inductelco, Ltd:	
Universal work handling unit for induction and flame hardening	28
Induction heating. Fusing nylon to metal by	296
Induma milling machines. New	103
Industrial Drives, Ltd:	
Type TL358 torque limiting pulley	184
Industrial expansion in the Republic of Ireland	297
Industrial investment. The need for greater	641
Industrial Reorganization Corporation and the machine tool industry	921
Industrial Sales (Machine Tools), Ltd:	
Exhibits at 3rd Engineering Inspection and Control Exhibition	59
See also	92
Industrial Trucks, Ltd:	
Weel-Easi bogie truck for loads up to one ton	807
Industrial unrest in the UK. Overseas awareness of	117
Industry. manufacturing. Capital investment in	7, 76
Infra-red radiation pyrometer for measuring the temperature of a heated silica tube	539
Ingersoll-Rand Co, Ltd:	
New factory for the production of pneumatic tools	842
Ingramatic S p A:	
Thread rolling machine demonstrated at International Wire Exhibition	946
Injection moulding machines. British-built Cincinnati	275
Injection moulding screw. Danfoss Orbit motor drive for	221
Injection plunger faced with bronze. Use of	387
Inland Motor Corp:	
Rotran dc motor/tachogenerator units	915
Inserted tooth construction for large gears	24
Insey Industrial, Ltd	390
Inspection and Control Exhibition. 3rd Engineering	55
Inspection centre. LK Maxi-Check	269
Inspection. contour. Ex-Cell-O projector tracer for	966
Inspection equipment. Automated	803
Inspection fixture for checking the radial thickness of piston rings. Fully-automatic	554
Inspection microscope. Precision Grinding	425
Inspection of work. PG Optidress/Projector unit for wheel dressing and	763, 1000
"Inspector" type LPIBV horizontal optical projector. Derby	61
Instabrade Mark V dc injection braking unit	331
Instanter Machine Tool Engineers, Ltd:	
Guard fencing for machine tools	90
Instruments, Electronics and Automation Exhibition	914
Insulating stators with powdered epoxy resin	11
Intec AG:	
Intec-Boy suction equipment for machine cleaning	168
Integral, Ltd:	
Automatic honing of small parts for hydraulic pumps and motors	492
Integrated Dynamics, Inc	624
Integrated Graduate Programme.	
Birmingham Graduate School of Machine Tool Technology and the	219
International Combustion, Ltd:	
MeLeSco automatic butt welding machine for tubes	909
International Computers, Ltd:	
ICL 7300 Advanced Graphics System	749
International Computing Services, Ltd:	
NC control tape preparation service	687
International Engineering Concessions, Ltd:	
Ball-ended plug gauges	647
Ballizing	388
International General Electric Co. of New York, Ltd:	
Borazon type II industrial abrasive	187
International Nickel, Ltd:	
A high-strength low-alloy nickel steel	965
Developments in hot working of chromium-nickel base alloys	734
New alloying process	99
Magnicrol process for producing magnets	151
International Wire Exhibition. Second	944
Interroll, Ltd:	
Conveyor rollers	72
Inverter for drums and other items. Lodematic	831
Investment casting plant. Fully-automatic ceramic shell	713
Investment in manufacturing industry. Capital	7, 76
Investment. The need for greater industrial	641
Investment. The urgent need for greater industrial expansion in the Republic of	321
Ireland. Industrial expansion in the Republic of	297
Ireland. Producing twist drills in	575
Irish engineering symposium. First	958
Irish Machine & Tool Co, Ltd:	
Production of twist drills	575
Iron and Steel Institute:	
Conference on tribology in powder metallurgy	179
Iron castings. Engineering properties and performance of modern	662
Iron castings for machine tools	96
Iron casting techniques. Developments in	521
Iron castings. Highly-efficient use of NC turret-type drilling machines for operations on	562
Iron, melting. Monometer 50-ton capacity rotary furnace for	540
Iron. nickel SG. Large machine tool casting in	918
Iso-Specific Co, Ltd:	
Exhibits at Mechanical Handling Exhibition	832
J & S - Alston universal relieving attachment	765
Jacks. Opperman machine screw	831
Jacks. Webtool hydraulic	664
Jackson, R:	
Group technology and the cell system	157
Jacobs Manufacturing Co, Ltd:	
Exhibits at Gauge and Tool and Power Press Exhibition	768
Japan Machine Tool Trades Association:	
Production of NC lathes in Japan	638
Japan Management Association, Delegates of, visit Molins Machine Co.	35
Japanese-built machining centres	91, 856
Japanese developments in direct on-line computer control of machine tools	427
Jenicek, Prof L:	
Machinability of aluminium alloys for pressure die casting	982
The functions of overflow wells in pressure die casting	876
Jet engine components. Machining, on VDF NC lathes	111
Jib. Pelloby Junior "understrutted" wall	950
Jidic-H5B-ATC machining centre. Mitsui Seiki	93
Jig. Ajax Hexadrill drilling	901
Jig borer. Perrin type AV3	29
Jig borer. Rebuilt Newall type 2442	340
Jig saw. Trend type PR/577 variable-speed	225
Jig. Wayte "spotting" drill	626
Jigs and fixtures. Examples of parts for, from the WDS range	809
Johnson, Prof W:	
Bubble-casting of aluminium containers	475
Rotary forging	538
Jolly-type fluid/mechanical coupling. Aurora	218
Jones, A A, & Shipman Ltd:	
Exhibits at Gauge and Tool Power Press Exhibition	765
Machines for diamond honing of injection-pump components	380
New London premises	434
Type 1049 production cylindrical grinder	434
Type 1411 SFT surface grinder	435
Jones & Attwood, Ltd:	
Exhibits at Gauge and Tool and Power Press Exhibition	774
Jones & Lamson NC turreted lathe employed for precision deep hole drilling	338
Jones, George, Ltd:	
500-ton forming press	27
Juaristi universal grinder	151
Junker, Erwin, Maschinenfabrik:	
Machines for operations on taps and other tools	108
K	
K & F Treatments, Ltd:	
Microcoat coating technique for small components	712
K & L, Fraser, range of proportional hydraulic control valves	198
Kaiser tooling and pre-setting equipment	965
Kango Hammers, Ltd:	
Turning fixture with built-in hydraulic clamping	607
Kapp & Co:	
Spline grinding machines	629
Kay Pneumatics:	
Kay-Teknova lubricators	588
Keate, W:	
A method of quickly estimating cycle times for NC machining	134
Keene & Tompkins (Engineers), Ltd:	
Pneumatic toggle press	30
Kelch & Co:	
Trabant 600 tool pre-setting equipment	127
Kellenberg, William A:	
Tooling up for productivity	371
Kent Owens Machine Co:	
Special indexing fixtures for air-motor rotors	206
Keramatic machine for making aluminium labels or panels	868
Kerry Machine Tools, Ltd:	
New showroom in Bristol	555
Kerry Ultrasonics, Ltd:	
"Compact" ultrasonic cleaning units	506
Ultrasonic cleaning plant for printed circuit production line	117
Keyway milling. Rattray-Forest machines for skin and	348
King, Geo W, Ltd:	
Application of New Conveyor stainless steel slot-band chain	153
Large Trials store at the Perkins works	509
Swarf crushing and centrifuging plant installed at Sefko works	902
Type M250 2-speed hoist	555
Kingmann-White Inc:	
Rapidaptor quick-change tooling system	226
Kingsbury, Geo, & Co (Machine Tools) Ltd	223
Kismet, Ltd:	
Champion high-pressure hot water washing unit	118
Koppen & Lothen proportional hydraulic control valves	198
Kumla plate bending rolls. Large	13
Kuhne, H:	
Miniature air valve	622
Miniature airline coupling	709
Kurim type VIR multi-purpose machines	270
Kux 800-ton cold-chamber die casting machine	991
Kvist, Sten-Ake:	
Turning and drilling some typical sintered ferrous materials	179
Kwik-Chek dial-indicator gauge. Hamilton	194
L	
LIDA electronic readout equipment for a Harrison L6 centre lathe.	
Heidenhain	258, 5E Mar 11, 476
L K Tool Co, Ltd:	
Maxi-Check inspection centre	269

Labels and panels. Keramatic machine for making aluminium	Page	Labels and panels. Keramatic machine for making aluminium	Page
Lambert, S, AG: Type 124 worm and thread milling machine	584	Lectroetech (Gt. Britain), Ltd: Equipment for combined ac/dc metal marking	888
Lamborghini Ferruccio: The Zt 75 car - an exercise in the use of zinc	467	Lees-Bradner Co: Hobormill machine for hobbing and milling gears and threads	344
Lamp, Daray 1200 adjustable	426	Lees, JB & S., Ltd: Electron beam welding bi-metal strip	227
Lamson Engineering Co, Ltd: Exhibits at Mechanical Handling Exhibition	832	Legge, J., & Co Ltd: Installation of Hahn & Kolb rotary transfer machine for lock bodies	393
Lan Electronics	263	Lenchs (Birmingham), Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	769
Lanchester College of Technology: Design of opposed-pad hydrostatic bearings for machine tool slideways	407	Leonard, Addison, 35 Tubemill tube-end milling machine	631
Lanchester Polytechnic: Design of conical hydrostatic journal bearings	250	Letters to the Editor:	
Landing gear components, Machining operations on, using machining centre built by user	373	Capital investment in manufacturing industry	76
Language for NC programming. Rolls-Royce PROCONSEL	26	Control of tool temperature	76
Lapping machine. Precisionlap type 700 flat	31	Digital readout system	476
Lapping machine, Rebuilt Newall Rigidlap 20-in.	340	EDC machine tool report	476
Lapping machine. "Technical Lapping"	629	Functions of overflow wells in pressure die casting	875
Laser Associates, Ltd: Exhibits at International Wire Exhibition	946	Group technology and the cell system	156, 197, 275, 317, 635, 757, 836, 876
Fully-automatic NC laser-beam drilling equipment	671	"Metricated" machine tools	35
Laser beam. Drilling by	671	National Exhibition Centre	318
Laser beam machining	215	Overseas trade in machine tools	75
Laser beam microwelding and drilling unit	678	Proposals for the training of technicians	596
Laser/CO ₂ gas combination. Advantages of	977	Technical translations	198, 396
Laser systems and applications. BOC	977	Leveler. Retracta dock	831
Lathe. Dowding & Doll Accuratoool type 6D programme controlled automatic-cycle turret	694	Lewinski, Jerry: Universal power chucks facilitate small batch production	860
Lathe. Dunbar & Cook axle casing	115	Lewis Spring Products, Ltd: Daray 1200 adjustable lamp	426
Lathe. East German type DF315 LNC, Demonstration of an	458	Leytool, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	762
Lathe, Gate Winchester 125 hydraulically-operated capstan, with Ether programme control	148	Libby lathe for deep-hole boring	372
Lathe. Gottwaldov type RP 100 NC turret	158	Lifter for narrow sections. Long magnetic	756
Lathe. Hand loading system for a programme-controlled capstan	343	Lighting system with Mazda Kolorlux lamps installed at Vickers. New	75
Lathe. Harrison L6 centre, Heidenhain LIDA electronic readout equipment for	258, 5E Mar 11, 476	Linbin storage unit for taper shank-tools	312
Lathe, Heinemann type DN300 NC, with AUTOPOL. GKN use	51	Lincoln Electric Co, Ltd: New automatic submerged arc welding plant installed at Newell Dunford for welding of drums	587
Lathe. Herbert Cri-Dan type CT high-speed copying and thread-chasing, Demonstration set-up on	66	Line, Automatic, for producing motor car silencers	14
Lathe, Herbert Monoslide, with Dialset equipment	670	Line, Bronx "cup-up", installed in Canadian firm of steel stockholders	304
Lathe, Jones & Lamson NC turret, employed for precision deep hole drilling	338	Line, Flow, at Richard Berry & Son for production of cold-extruded workpieces	430
Lathe. Leblond Tape-turn IV NC	856	Line, Flow-, practice at the works of Turner Mfg Co Ltd	722
Lathe, Libby, adapted for deep-hole boring	372	Line following head. BOC photo-electric	979
Lathe. Manurhin Decomat 50 type C sequence-controlled automatic turret	544	Line, Hoffmann transfer, for producing gearbox shift rails	383
Lathe, Polymecanique front-operated automatic	549	Line, Mauser transfer, for compressor casing	940
Lathe programming service, NC, by Salt Engineering	238	Lines, Cylinder block, at the BLMC Cotton Hackett plant	522
Lathe spindles. Herbert-BSA use NC grinding machine for	223	Linisher band grinding machine with dust collection unit	100
Lathe, VDF type V 800 NC, Operations on the, at Rolls-Royce	111	Linvar, Ltd: Linbin storage unit for taper-shank tools	312
Lathe with hydrostatic bearings and drive. A precision	618	Lion pitch control unit on Bennett spring making machine	944
Lathes. Accuratoool turret, INA Automation loading systems for	878	Littton's Machine Tool Co, Ltd: Additional capacity for slideway grinding	837
Lathes. Cazeneuve types HB CA-12 and HB CAT-12 automatic-cycle	547	Lloyd, F.H., & Co, Ltd: Computer installation	395
Lathes. Cazeneuve type HBX 360 and HB575 centre	316	Lloyd, Richard, Ltd: Galton Slimlock face milling cutters	997
Lathes. Hardinge turret, Tool presetting equipment for	448	"Load indicator, hook", Wylie	532
Lathes, Nickols EMI-MEC automatic, of 1½-by 2-in bar capacity	914	Loader. Aylesbury Automation type 25L elevating hopper	103
Lathes. Prawema centre, turret and second-operation	582	Loader. Transamatic gantry-type	928
Lathes, Production of NC, in Japan	638	Loading system for a programme-controlled capstan lathe. Hand	343
Lathes, programme-controlled capstan, Tapping on	693	Loading systems for Accuratoool turret lathes. INA Automation	878
Lathes. Stokvis TUAM, Developments in connection with	302	Lock bodies. Rotary transfer machine for	393
Layouts, master, for printed wiring boards. Marconi technique for making	675	Loedematic, Ltd: Exhibits at Mechanical Handling Exhibition	831
Lea-Ronal (UK), Ltd: Plating processes developed to conserve nickel	489	Logi-Pak fluid logic control circuit	696
Leblond, RK, Machine Tool Co: Tape-Turn IV NC lathe	856	Logic, fluid, banks, Maxam introduce modular	678
Lees-Ronal (UK), Ltd: Fixing cleaning and polishing cloths		Logic, fluid, equipment. Developments in logic, Solid-state, modules for machine tool control	611
Loops on ends of lengths of wire. Operation of bending, improved by automation		Logicon 2 static switching system	834
Londesborough Hygiene Products, Ltd: Fixing cleaning and polishing cloths		Londesborough Hygiene Products, Ltd: Fixing cleaning and polishing cloths	991
Loops on ends of lengths of wire. Operation of bending, improved by automation		Loops on ends of lengths of wire. Operation of bending, improved by automation	689
Looping, spring, machine. BUD International		Looping, spring, machine. BUD International	944
Loughborough University of Technology: Concrete in machine tools		Louvre plates. Lynester standard	653
"Low-tolerance" weight-saving in aircraft engines		"Low-tolerance" weight-saving in aircraft engines	859
Lowe, R, W: Coarse-or fine-pitch metric threads?		Lubricant, Rocol RL-5 drawing, used for a difficult press operation	517
Lubricant for use with friction drives. "Sticky"		Lubricants. New Transgard open-gear Lubrication. Abrasive-jet treatment to improve	981
Lubrication system. Acheson/Rimrock Lubrication system. Improvements obtained with Acheson/Rimrock die Lubrication systems. Use of one oil for hydraulic and		Lubrication system. Acheson/Rimrock Lubrication system. Improvements obtained with Acheson/Rimrock die Lubrication systems. Use of one oil for hydraulic and	312
Lubricators. Kay-Teknova		Lubricators. Kay-Teknova	490
Lucas Industrial Equipment, Ltd: New hydraulic equipment		Lucas Industrial Equipment, Ltd: New hydraulic equipment	588
Lucy, W, & Co Ltd: Highly-efficient use of NC turret-type machines		Lucy Gauges pressure indicators	185
Installation of Hahn & Kolb rotary transfer machines		Lucy Switch pressure switches. Improved	625
Lucy Gauges pressure indicators		Lye Steel Co: New stockholding warehouse	392
Lucy Switch pressure switches. Improved		Lynester Products, Ltd: Standard louvre plates	653
Lye Steel Co: New stockholding warehouse		Tool stand for NC machines	647

Page	Page		
Machine tools. The West German market for imported	386	Mechanized assembly - some experiences of a leading user	642
Machining and assembly at one set-up on a Traub automatic	742	Meddings, W H, Ltd: Type HTH25 pitch-controlled tapping head	105
Machining cells, Group technology and, in the small-batch production of valves	2	Meldas 4200 NC system. Mitsubishi	93
Machining centre. Balding Beavermatic	710	MeLeSco butt welding machine for tubes	909
Machining centre. Burkhardt & Weber MC4	195	Membrane double restrictor for hydrostatic bearings	619
Machining centre. Holms Multimatic II	33	Menn, E W: Type KSS planetary screwhead slotting machine	944
Machining centre. Machining landing gear components on a	373	Mercer, Thomas, Ltd: Exhibits at Gauge and Tool Exhibition	811
Machining centre. Makino DMCP-105	857	Metafilter. Type D	316
Machining centre, Moog Hydra-Point, with auto tool change	472	Metal removal by skiving on turning machines	362
Machining centre. Newall-Burgmaster Econ-O-Centre NC turret-type	188	Metal-working with explosives	417
Machining centres. Some Japanese-built	91, 856	Metatool (Precision Engineers), Ltd	687
Machining, electrical discharge, Advances in	242	Metco, Ltd: Coating with nickel by metal spraying	17
Machining, electrochemical, Advances in	288	Metric dry filter spray booths. Volspray	50
Machining facilities. NC, Centre Engineering to provide sub-contract	195	Metric rules. Moore & Wright multi-anvil and direct-reading micrometers and	541
Machining gear blanks on an Amtec-New Britain chucking automatic	545	Metric sine table. Largest Windley	636
Machining jet engine components on VDF NC lathes	111	Metric threads? Coarse- or fine-pitch	457
Machining masters made from Acrylate resin. Copy	656	"Metricalized" machine tools	35
Machining methods. Electrical and chemical	212, 242, 288	Metrication Board: Films: Keys to metrication	8E Mar 25
Machining, NC, A method of quickly estimating cycle times for	134	Metrication conference. BSI practical	933
Machining of computer-designed cams. Continuous-path NC	453	Metrology club. NEL to form	958
Machining of ultra-high strength steels. Experience in the	175	Micro-Sine table. Moore No 3	584
Machining. Plasma arc, electron beam and laser beam	215	"Micro-wire" welding unit. Hobart	798
Machining precision components under programme and tape control	322, 7E Mar 18, 493	Microcoat coating technique for small components	712
Machining techniques on a Mauser transfer machine. Unusual	896	Microfin Diamond Products, Ltd: Triform grinding wheel profiling tool	272
Machining under constant temperature, Important benefits gained by, as compared with constant-speed conditions	332	Microflo powder alloy process for hard facing treatment for wire guide rollers	88
Machining. Wide abrasive belt	863	Micromatic Home, Ltd: An unusual honing operation	909
Mack Trucks, Inc: Use of one oil for lubrication and hydraulic systems	492	Micrometer height gauge. Mitutoyo series	917
Macready's Metal Co, Ltd: Use of Greenwood & Batley elevating platform truck	579	515 Height Master	829
Magnatek, Ltd: Acheson/Rimrock lubrication system in use of zinc die casting dies	467	Micrometers and metric rules. Moore & Wright multi-anvil and direct reading	541
Improvements obtained with Acheson/Rimrock die lubrication system	312	Microscope. Precision Grinding Inspection	425
Magnesium Elektron, Ltd: Press-cast process for magnesium	301	Microped units for indexing and positioning. Demag	381
Magnesium. Press-cast process for Magnets. Magnicoll process for producing Magnicoll process for producing magnets	151	Microwelding and drilling unit. Laser beam	678
Magnifier. Blacklight illuminated	370	Middlesex Tool & Gauge Co, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	767
Maintenance work. Ambersil 40+ compound for	789	Mikro gear cutting and hob sharpening machines. New	657
Makino Milling Machine Co, Ltd: Type DMCP-105 machining centre	857	Mikron, Goulder, type R120 roundness measuring machine	770
Type MCPA-100 machining centre	95	Mill, continuous, for seamless tube. £10 million	18
Milling machines for machining precision components under programme and tape control	322, 7E Mar 18	Mill-Drill template-controlled work-table	993
Man-au-Trace copying equipment on Elliott Milmor milling machine	580	Mill. Rohr 2-spindle NC bridge	736
Manchester Polytechnic: Group technology and the cell system	836	Milling and boring machine, Ratiere-Forest horizontal, with digital readout equipment	114
Manchester University: Group technology and the cell system	318, 757	Milling and boring machine. Savings with the use of an NC horizontal	682
UMIST courses for qualifications in machine tool technology	872	Milling cutter, Brooke-Strasmann shell, and end mill	772
Manheim chain pullers	957	Milling cutters. Galtona Slimlock face	997
Manufacture de Machines du Haut Rhin, S A: Manurhin Decomat 50 type C sequence-controlled automatic turret lathe	544	Milling cutters. Prolite High Shear	956
Marbax, Gaston E, Ltd	126, 301, 717, 994	Milling, drilling and boring machine. Ratiere-Forest Polyax type HI horizontal-spindle NC 3-axis	114
Marconi Aeronautical Divn: Precision drawing aid	675	Milling, drilling, tapping and boring machine. Ratiere-Forest Polyax type V1 NC vertical-spindle	113
Marconi-Elliott Computer Systems, Ltd: Type 928 graphical display unit and light pen used in conjunction with a computer for design of engineering component	750	Milling gears and threads. Hobormill machine for hobbing and	344
Marconi Instruments, Ltd: Progress in metricalation	934	Milling machine. Adcock & Shipley type 2E production	918
Magnetic Handles (EET), Ltd: Long magnetic lifter for narrow sections	756	Milling machine. Addison-Leonard 35	
Magnetic lifter for narrow sections. Long	756	Tubemill tube end	631
Markham, G: The National Engineering Centre	318	Milling machine, Balding Beaver Mark II, with Mimik copying equipment	674
Marking. Electroetch equipment for combined ac/dc metal	888	Milling machine. Balding Beavermill 4-head	674
Marking machine. Pryor automatic electro-chemical	581	Milling machine. Dufour type 161 CS automatic-cycle	315
Marking the shank ends of tap blanks. Junker type VFS10 machine for milling squares and	110	Milling machine, Elliott Milmor, with copying equipment	580
Marking out castings prior to machining. Portage Double Quick equipment for	683	Milling machine. Forest type OR500 NC	583
Marron Machines, Ltd	511	Milling machine. Fritz Werner type KF1 Sp automatic-cycle copy	992
Martin, Arthur: Film: Gas cooker production	357	Milling machine. Giewont type FWE40A automatic-cycle heavy-duty	149
Martonair, Ltd: Exhibits at 1st Engineering Design show	471	Milling machine. Grimston type A vertical	581
Marubeni-Iida Co, Ltd	37	Milling machine. Huron type MU6CNC	313
Marwin Cutting Tools, Ltd: Grinding spiral carbide cutters on Ward machines	255	Milling machine. Lambert type 124 worm and thread	584
Masing, Dr. & Co, UK	37, 615		
Masing, Dr. & Co, KG: Masing/Bendix NC systems	615		
Mask, Polythene protection	138		
Mass-centring machines for crankshafts. Schenck	118		
Massey, B & S, Ltd: Presses for hot and cold forging	651		
Massey-Schlatter AG	652		
Masterton press control equipment. Improved	755		
Matchless Machines, Ltd	783, 802, 965		
Materials handling for automatics shop. Efficient	208		
Mathieson, Olin Ltd: Hi Energy Fluid Power Divn: Air-operated hydraulic power pack	489		
Matrix disc/dog clutch incorporating INA needle bearings	312		
Matrix 1000 optical projector	56		
Matrix 3-dimensional co-ordinate measuring machine	835		
Matrix type 70 thread grinder for ball screws	236		
Matherson, Ltd: Double girder cranes installed at Dialoy Ltd	695		
Mauser-Werke AG: Transfer line for compressor casings	940		
Transfer machine for unusual machining operations on motor car stub axles	896		
Maxam Power, Ltd: Maxalog fluid logic elements used in automatic drilling set-up	229		
Modular fluid logic banks	678		
Pneumatic cylinders for automatic operations on coining press	347		
Step-up relay used in conjunction with guard on 250-ton press	181		
Maxi car: Production, assembly and testing of the 1485-cc-series engine for the BLMC	402, 522, 602		
Maxi-Check inspection centre. LK	269		
Maxi Die die set. "British Aero"	776		
Maxnovo turret lathe	85		
Mazda Kolorlux lamps, New lighting system with, installed at Vickers' works	75		
McAllan, J D: Inserted tooth construction for large gears	24		
Measurement for hot-rolled rod. Optical gauge for continuous	70		
Measurement of bearing noise and vibration of moving parts. Cosmocord type A8982 vibration indicator for	627		
Measurement of induction-hardened layers. NOIE eddy-current system for non-destructive	513		
Measurement of wall thickness of fuel element cans. Automatic	804		
Measuring bench for checking large vernier calipers, etc. Heidenhain	60		
Measuring equipment for grinding. Movomatic in-process	224		
Measuring flow restriction in cigarette filter rod. Solex air gauge for	811		
Measuring machine. Goulder Mikron type R120 roundness	770		
Measuring machine. Large Sheffield Cordax	249, 320		
Measuring machine. Matrix 3-dimensional co-ordinate	835		
Measuring machine. Taylor-Hobson Talyrond 100 roundness	56		
Measuring surface finish. Taylor-Hobson Surtronic "miniature traverse unit" for	57		
Measuring system with digital read-out facilities. Foster	28		
Measuring the diameter of a hot bar. BISRA non-contact gauge for	513		
Measuring the temperature of a heated silica tube. Mullard infra-red radiation pyrometer for	539		
Mechanical engineering economic assessment	357		
Mechanical fingers. Flexi-Grip	510		
Mechanical Handling Exhibition	830		

	Page
Milling machine. Large Droop & Rein copy	210
Milling machine. Large Wilson 6-spindle tracer-controlled	371
Milling machine. Reiden type FU100 universal	101
Milling machine. Reiden type KF500 copy	27
Milling machine. Rouchaud type FV 80 C 113-115 automatic-cycle vertical-spindle production	543
Milling machine. Rohr NC 5-axis single-spindle	736
Milling machine, Schaffner, modified for chamfer grinding operations	632
Milling machine. Sajo HBF 450 NC horizontal-spindle	798
Milling machine. Snyder helical cam track	331
Milling machine. Stankomill type 6605 duplex production	936
Milling machine. Vernier FV380 knee-type	547
Milling machines, Bridgeport, for dispatch to West Germany	650
Milling machines. Extended range of Elliott "modular cube construction"	68
Milling machines. Makino, Machining precision components under programme and tape control on	322
Milling machines. New Induma	103
Milling, skin and keyway, Ratier-Forest machines for	348
Milling slots in tape recorder heads. Use of Westwind air-bearing spindles in	731
Milling squares and marking the shank ends of tap blanks. Junker type VFS10 machine for	110
Milling standard and non-standard threads on neck-ring moulds for glass and plastics containers. Machine for	617
Milmor milling machine with copying equipment. Elliott	580
Milmor Super 10 turret milling machine. Elliott	69
Mimik (UK), Ltd: Copying equipment on Beaver Mark II milling machine	674
Minder. machine, Bon type AMM automatic	155
Mini-Brake mechanical-type press brake. Rushworth	100
Mini Cleaners. Dawe series 6576 ultrasonic	34
Mini-Grinder. ATA type RA15	452
Mintech Industrial Liaison Centre	257
Mirror-finishing light alloy materials. Diamond fly-cutting for	731
Mitsubishi Heavy Industries, Ltd: Types MPA-15 and MP3-K machining centres	92
Mitsui Seiki Kogyo Co, Ltd: Jidic-H5B-ATC machining centre	93
Mitutoyo series 515 Height Master micrometer height gauge	917
Mobil Oil Co, Ltd: Mobilarma rust and corrosion preventives	390
Solvax 810 - a new water soluble oil	397
Modular construction. Unit construction or	721
"Modular cube construction" milling machines. Extended range of Elliott	68
Modular fluid logic banks. Maxam introduce	678
Modular machine tool units. Standardization work on	394
Modular power stroboscope. Strobe Automation type 3K	135
Module craft training and its application in small and specialist firms	507
Modulex 3-Dimensional Planning, Ltd: System for planning machine layout and product flow	447
Molins, Ltd: Group technology and the cell system	635
Molins Machine Co, Ltd: Machine Tool Divn: Visit from delegates of Japan Management Association	35
System 24 machine in use at Ferranti Ltd	167
Molybdenum, Disc of 0.01-in, machined on Sheffield ultrasonic machine	748
Mona-Hobson tangential form grinders. Application of	782
Monitoring and audible alarm systems. Norgren Fluidics process	697
Monitoring and control of machine tools by computer. The Buh system for Monitoring cutting fluid concentration. Refractometer for	728
Monometer Manufacturing Co, Ltd: 50-ton capacity rotary furnace for melting iron	540
Furnaces for die casting	990
Mini rotary furnace	946

Monoslide lathe, Herbert, with Dialset equipment	670
Monsanto Chemicals, Ltd	70, 421
Monsanto Co, USA: "Sticky" lubricant for use with friction drives	70
Moog, Ltd: Fluidic/hydraulic interface servo-valves	624
Hydra-Point Divn: Demonstration vehicle	50
Machining centre with auto tool change	472
Moon Bros, Ltd: Automatic line for producing motor car silencers	14
Type ZR automatic seaming machine for round motor car silencers	270
Moore Reed & Co, Ltd: British-built Vernitron type DT-104 Data Port portable terminal equipment	353
Moore Special Tool Co: No 3 Micro-Sine table	584
Moore & Wright (Sheffield), Ltd: Exhibits at Gauge and Tool Exhibition	812
Metric rules	541
Multi-anvil and direct-reading micro-meters	541
Morganite Thermal Designs, Ltd	468
Morris, B O, Ltd: Additional Morrisflex type MJ tap-holders	343, 767
Exhibits at Gauge and Tool and Power Press Exhibition	767
Morrisflex tapholders	343, 767
Moss, F W, Ltd: 360-station indexing table	488
Motor car bumpers, Redman high-output plant for production of, for Russia	131
Motor car components, die cast, Machining operations on	982
Motor car crankshafts, Schenck mass-centring machines for	118
Motor car cylinder block lines at the BLMC Cofon Hackett plant	522
Motor car engine and transmission gear production at BLMC	602
Motor car engines. Gauge for use in timing	938
Motor car gear blanks, Cold forming, on a transfer press	690
Motor car. Hillman Avenger, 1000 cold-extruded half-shafts per shift for the	430
Motor car. Maxi, Production, assembly and testing of the 1485-cc E-series engine for the BLMC	402, 522, 602
Motor car rack housings. Pollard machines for	530
Motor car silencers. Automatic line for producing	14
Motor car silencers. ZR automatic seaming machine for round	270
Motor car steering knuckles. Buhr trunnion-type machine for operations on	588
Motor car stub axles, Unusual machining operations on, on a Mauser transfer machine	896
Motor car, The ZN75 - an exercise in the use of zinc	467
Motor end frames. Special drilling and tapping machine for Newman	552
Motor faults. Hipex detector for 3-phase	487
Motor speed controller. Zenith Varispeed dc	487
Motor. Staffa B10 hydraulic	343
Motor/tachogenerator units. Rotran dc	915
Motor vehicle gearbox shift rails. Hoffmann transfer line for producing	383
Motor vehicles. Efficient manufacture, assembly and testing of gearboxes for commercial	722
Motors. Demag brake, and Microspeed units	381
Motors. hydraulic pumps and, Automatic honing of small parts for	492
Motors, stepping, Uni-Lec tape-programmed equipment for controlling	939
Moulds for steel castings. Paint for	469
Moulds. plastics, Tellflow beryllium copper cavities for	627
Moulded nylon contact shoes	873
Moulding, Dough, of glass impregnated plastics	744
Moulding machines. British-built Cincinnati injection	275
Mouldings. Air Products Cryo-Trim deflashing equipment for rubber	510
Mounting equipment for NC machines. Work,	850
Movomatic in-process measuring equipment for grinding	224
Mueller Gages Co: Gauge for large diameter grooves and recesses	712

Mullard, Ltd: Infra-red radiation pyrometer for measuring the temperature of a heated silica tube	539
Multi-purpose machines. Czechoslovak-built type VIR	270
Multi-slide machine. Rockwell type 620	776
Multi-station assembly machines at AC-Delco. Roevac	644
Multimatic II machining centre. Holms	33
Musical instruments. Bending U-shaped components for	478

N

NAC (Redditch), Ltd: Developments in the Vacnad system	903
NEL to form metrology club	958
NSR Punches, Ltd: Exhibits at Gauge and Tool Exhibition	809
Naples, JW: Solid-state logic modules for machine tool control	611
National Economic Development Office: Mechanical engineering economic assessment	357
National Engineering Laboratory: Cantilever-type structure built up from carbon fibre rods forming part of equipment for in-process control when turning 6-ft diameter rolls	59
Exhibits at 54th Physics Exhibition	512
Formation of metrology club	958
Inserted tooth construction for large gears	24
National exhibition centre. The	201, 318
National-Kayser UK	574
National Machinery Co: Exceptionally large National-Kayser cold forming machines	574
National Physical Laboratory: Exhibits at Computer Graphics 70	751
National Research Development Corp: Licence issued to US firm for making carbon products	957
Naval Ordnance Inspection Establishment: Eddy current system for the non-destructive measurement of induction hardened layers	513
Nealis Harrison, Ltd: Application of New Conveyor stainless steel slat-band chain	153
Neck-ring moulds for glass and plastics containers. Machine for milling standard and non-standard threads on	617
Needle bearings for Matrix clutches	312
Needle Fliess diamond dressing tools	955
Nemo Heat Treatments, Ltd: Installation of new vacuum furnace	438
Netherlands Physical Society: Beta-radiation thickness gauge	539
Neville, J C, Ltd	268
"New Conveyor" stainless steel slat-band chain application	153
Newall-Burgmaster, Ltd: Econ-O-Centre NC turret-type machining centre	188
Newall Engineering Co, Ltd: Factored Machine Tool Divn: Activities of the Division	340
Newell Dunford Engineering Ltd: Welding of drums on Lincoln Electric automatic submerged arc welding plant	587
Newman Industries, Ltd: Special drilling and tapping machine for motor end frames	552
Nibbling and punching machine. Strippit Custom 30/30	423
Nickel, Coating with, by metal spraying	17
Nickel materials. Penetrated-steel instead of high-	110
Nickel. Plating processes developed to conserve	489
Nickel SG iron. Large machine tool casting in	918
Nickel steel. A high-strength low-alloy	965
Nicks Automatiques (EMI), Ltd: EMI-MEC automatic lathes of 1½- and 2-in bar capacity	914
Nishimura Manufacturing Co, Ltd: Type-TM metal slitting machine	37
Noise, measurement of bearing, and vibration of moving parts. Cosmocord vibration indicator for	627
Noise reduction. The growing emphasis on	161
Noise reduction. The increasing emphasis on	442
Noise reduction. The need for	281
Norcon (Norris), Ltd: Valves for controlling oil operating from fluidic signals	696

Page	Page	Page	
Norgren, C A, Ltd:			
Exhibition van	757	Wadkin type TH Mark 3 drilling	
Norgren Fluidics Divn:		machine	493
Recent developments in fluid logic equipment	697	Wire termination machine	456
Impacting jet sensor for detecting drill breakage by fluidic means	915	Numerical control program. A special-purpose	26
North Bar Tool Co, Ltd:		Numerical control programming service	636
Torque spanners made from sintered components	382	Numerical control. Rolls-Royce experience with computers and	25
North, Robert, & Sons (Sales), Ltd	712	Numerical Control Services:	
Norton Abrasives, Ltd:		NC programming service	636
Nortex colour-coded grinding wheels	693	Work mounting equipment for NC	
Norton, Sir James Farmer, & Co Ltd:		machines	850
Hydrowire extruder employing hydrostatic pressure		Numerical control. Some aspects of Rolls-Royce activities in the field of	111
Norton, W E, (Machine Tools), Ltd:		Numerical control system. Feed-rate coding for Bendix	37
Demonstration of Forest Polyax NC milling, drilling and boring machines	946	Numerical control system. Servotrol NC 70 753	
EDC machine tool report	113	Numerical control systems. Masing/Bendix	615
See also		Numerical control techniques. Shaft designed and made in one day using computing and	687
Notching machine. Elgin Notchomatic corner	629	Numerical control. Use of platens for producing prototype parts under	962
Notching machine for panels. Redman Unitool		Numerical information and a data bank, Applications and advantages of, at Ferranti Ltd	163
Notching machine. Strippit Fabramatic 30/30 NC hole punching and	806	Numerically-controlled contouring operations on titanium. Use of toroidal cutters for	413
Novarese, Officina Meccanica Fratelli:		Numerically-controlled horizontal boring and milling machine. Savings with the use of a	682
Nova type 10/13SE internal grinder	827	Numerically-controlled lathe programming service by Salt Engineering	238
Numerical control applied to large batch production	23	Numerically-controlled lathes. Production of, in Japan	638
Numerical control. Arrangements for applying, to the production of press tools	282	Numerically Controlled Machine Tools, Ltd	95, 322
Numerical control computer program systems. General purpose	25	Numerically-controlled machine tools - orders and deliveries	5E Jun 24
Numerical control. Machines with:		Numerically-controlled machine tools - rate of installation	561
Bausing Beavermatic machining centre	710	Numerically-controlled machine tools. Swedish Government factory for	956
Burkhardt & Weber MC4 machining centre	195	Numerically-controlled machine tools. Work holding on	761
Cincinnati Auto Shear	797	Numerically-controlled machines built by a user company	735
Cincinnati "chucking centre"	854	Numerically-controlled machines. Tool stand for	647
Czechoslovak type VIR multi-purpose machine	270	Numerically-controlled machines. Work mounting equipment for	850
Droop & Rein FPK 160/2 copy-milling machine	210	Numerically-controlled machining. A method of quickly estimating cycle times for	134
East German type DF 315 LNC front-operated lathe	458	Numerically-controlled machining. Center Engineering Co to provide sub-contract facilities for	195
Giddings & Lewis-Fraser type 70a-E4-T horizontal boring and milling machine	682	Numerically-controlled machining of computer-designed cams. Continuous-path	453
Gottwaldov RP 100 turret lathe	158	Numerically-controlled positioning. Qualification of the terms "accuracy" and "repeatability" for	869
Hayes Ferranti Tapemaster machine	283	Numerically-controlled turret-type machines. Highly-efficient use of	562
Heinemann type DN300 turret lathe	51	Nut. The Telco Stakenut	716
Heller 8-spindle turret-type drilling machine	563	Nylon contact shoe. Moulded	873
Hilgers type HYP 114 BD NU tube bending machine	230	Nylon. Fusing, to metal by induction heating	296
Holms Multimatic II machining centre	33	Nylonic Engineering Co, Ltd: Nylon 6 gears for printing machine	211
Houdaille Di-Acroc type 20 turret punch press	139		
Huron type MU6 CNC milling machine	313		
Japanese machining centres	91, 856		
Jones & Lamson type NCTL 4½ by 18 turret lathe	338		
Laser Associates laser beam drilling equipment	671		
LeBlond Tape-Turn 17 lathe	856		
Makino milling machines 322, 7E Mar 18			
Moog Hydra-Point type 1000 MC 3-axis machining centre	472		
Moog Hydra-Point machines	283		
Newall-Burgmaster Econ-O-Centre turret-type machining centre	188		
Qalters & Smith PNC-50-72 drilling machine	587		
Ratier Forest Polyax milling, drilling and boring machines	113		
Ratier Forest skin milling machine	348		
Rohr 6-axis Drivematic positioner	735		
Rohr 5-axis single-spindle milling machine	736		
Rohr 2-spindle bridge mill	736		
Rouchaud production milling machine	543		
Sandens Sajo HBF 450 horizontal-spindle milling machine	798		
Schärdt type B810 ST 1000 angular-head grinder	223		
Schlessi type DKE 16/NC/C vertical turning and boring mills	352		
Schlessi type 5VKE 800/1300NC/C vertical turning and boring mill	571		
Staveley Archdale Autonomic drilling machine	971		
Strippit Fabramatic 30/30 hole punching and notching machine	827		
TOS Kurim type VIR multi-purpose machines	270		
Turret head machine tool	286		
VDF type V800 lathe	111		
VDF 630 lathe	237		
Vero drilling machine for printed circuit boards	808		
Vero 1000 6-spindle turret-type drilling machine	563		
Wadkin double-column milling, drilling, boring and tapping machines	779		
		"Open forum". Fafnir	557
		Open University - Are its potentialities being exploited? The	801
		Opperman Gears, Ltd:	
		Efficient production of gear units	202
		Installation of heat treatment plant	996
		Range of mechanical screw jacks	831
		Recent developments	996
		Opposed-pad hydrostatic bearing for machine tool slideways. Design of	407
		Optical bench. Beck-Ealing	306
		Optical Gaging Products:	
		Ex-Cel-O projector tracer for contour inspection	966
		Optical Measuring Tools, Ltd:	
		Exhibits at Gauge and Tool and Power Press Exhibition	777
		Installation of Bruylzel mobile storage cabinets	61
		Optical profile grinder. Vilar type 210	548
		Optidress/Projector unit for wheel dressing and inspection of work. PG	763, 1000
		Orbit Controls, Ltd:	
		Types 71G 500 and 71G 505 bi-directional counters for position indicating duties on machine tools	917
		Orbit motor drive for injection moulding screw. Danfoss	221
		Orders and deliveries. Machine tool	
		7E Feb 4, 8E Feb 18, 5E Apr 8, 637, 718, 759, 796, 919, 5E Jun 24	
		Oregon Saw Chain Divn of Omark Industries:	
		Saw chain for cutting soft metal	849
		Orientator. Churchill headless screw	498
		Ormiston, P, & Sons, Ltd:	
		Strips rolled from wire	709
		Oven. AEW81 kW conveyor	596
		Oven. AEW 6-chamber electrically-heated	595
		Oven. Barlow-Whitney armature cutting	77
		Overflow wells in pressure die casting. The functions of	142, 875
		Overseas trade in machine tools	75
		Ownership of very expensive machine tools. Communal	961
		Oxygen profiling machine. Hancock Han-Co-Ordinate	32
		P	
		PG Optidress/Projector unit for wheel dressing and inspection of work	763, 1000
		PROCONSEL language (PROGRAM CONtrol SELECTION). Rolls-Royce	26
		Packing of fuel element cans for dispatch	805
		Paint for moulds for steel castings	469
		Pallet handler. Iso-Speedic	832
		Panels and labels. Keramatic machine for making aluminium	868
		Panels. notching machine for, Redman Unitool	806
		Park-Ohio Industries, Inc:	
		Tocco Div:	
		Fusing nylon to metal by induction heating	296
		Path Engineering Co, Ltd:	
		Hand loading system for a programme-controlled capstan lathe	343
		Pearson Panke, Ltd	221
		Peewee Gt Britain, Ltd:	
		Demonstration of thread rolling techniques at International Wire Exhibition	945
		Peeleco protective coating for metal	734
		Pellby Engineering, Ltd:	
		Junior "understrutted" wall jib	950
		Pels, Henry, (Agencies) Ltd	955
		Peltz & Ehlers 1400-ton transfer press:	
		Cold forming gear blanks on a	690
		Pendy & Son (Addlestone), Ltd:	
		Thorpenco clamp units	325
		Penetral-treated steel instead of high-nickel materials	110
		Perkins Manufacturing Co:	
		King Triax storage installation in main Peterborough factory	509
		Perrin Frères SA, Fabriques de Machines:	
		Type AV3 jig borer	29
		Perske/Tremjaeger brake for friction saws	356
		Perspex screen. Arcmaster	851
		Peters, GD, Co Ltd:	
		Hancock Divn:	
		Han-Co-Ordinate oxygen profiling machine	32
		Philips Electric Arc Welding, Ltd:	
		Type PZ5512/30 enclosed wire drive unit	905
		Philips equipment for digital read-out of cross-slide movements on Jones-Shipman grinder	434
		Philips Research Laboratories:	
		A precision lathe with hydrostatic bearings and drive	618

Page	Page		
Photo-electric line-following head. BOC Photo Resist Techniques (Sales), Ltd.	979	Press brake. Rushworth Mini-Brake mechanical-type	100
Keramatic machine for making aluminium labels or panels	868	Press brakes and presses. Strippit unit tools for	828
Physics Exhibition. The 54th	512, 539	Press brakes. New range of Rhodes mechanical	628
Pin brazing equipment. AGA type VFLB-250	273	Press brakes. Safan upstroking	422
Pines bending machine for producing U-shaped components for musical instruments	478	Press. Bronx 300-ton portal-frame hydraulic	796
Pines type 4 bending machine. Bending workpieces four at a time on a	574	Press building. Aspects of heavy	967
Pipes expanded by water pressure. Large	862	Press-cast process for magnesium	301
Piston rings. Fully-automatic inspection fixture for checking the radial thickness of	554	Press. coining. Maxam pneumatic cylinders for automatic operations on	347
Pitch control unit. Lion, Bennett spring making machine with	944	Press. Cold forming gear blanks on a transfer	690
Planing machines, Hyvarmill-converted, at the works of H W Ward & Co	874	Press control equipment. Improved Masterotor	755
Planning machine layout and product flow. Modulex system for	447	Press conveyor. Stanmill mobile	476
Plano-milling machine. Schiess travelling-bride	568	Press. Cowlishaw Walker type G2-250-S open back power	814
Plano-milling machines. Ernst-Somua	756	Press. Cowlishaw Walker 250-ton open-back	967
Plasma arc machining	215	Press. Di-Aero type 20 NC turret punch	139
Plasma-spraying technology service. AED	191	Press. George Jones 500-ton forming	27
Plastics and rubber. Wilson hardness testers for	528	Press. Griffiths Bentley M 80-ton non-inclined	815
Plastics coating powder. Telcoset 40/E rapid-curing	107	Press guard. Price flaplock	816
Plastics. glass impregnated. Dough moulding of	744	Press guard. Price Flap-lock side-swing	664
Plastics moulds. Telflow beryllium copper cavities for	627	Press. Hounsell 40-ton high-speed hydraulic	102
Platarg Engineering, Ltd: Type SWS transfer presses	535	Press. Keene & Tompkins pneumatic toggle	30
Plate bending rolls. Large Kumla	13	Press of 2, 800 tons rating for roll-bending ships' plates of high-tensile steel. Hugh Smith	278
Plate cutting machine. Large aluminium	216	Press operation. Use of Rocol RL-5 for a difficult	517
Plate, trip-. Extruded-section aluminium	412	Press Operations, Ltd: Clamp for press tools	636
Plates. forming steel. Bronx rolls for hot and cold	77	Press. Shaw 1250-ton powder metallurgy	406
Plates. louvre, Lynester standard	653	Press. Schuler 125-ton double-sided crank	815
Platens, Use of, for producing prototype parts under NC	962	Press. Taylor & Challen coining	775
Plating compounds. New chromium	429	Press. Taylor & Challen type DSRIE-100-24-27 double-sided crank	815
Plating. New Canning calculator for	397	Press tool service. Tata (India)	416
Plating plant. control of. Sealelectroboards for	130	Press tools. "Press Operations" clamp for	636
Plating processes developed to conserve nickel	489	Press tools. production of, Arrangements for applying NC to the	122
Plating system. Automated chromium	232	Press. Whitney 150-ton transportable hydraulic	462
Plating tank. Du Pont immersion heat exchanger for	638	Press. Wilkins & Mitchell straight-sided tie rod	774
Plessey Co, Ltd: Electronics Group	186	Press. Worcester open-back inclinable	774
Plessey Components Group: Industrial and Electronic Components Divn: Fluidic object detection system	26	Presses and press brakes. Strippit unit tools for	828
Recent developments in fluid logic equipment	696	Presses for hot and cold forging. Massey	651
Plessey Dynamics Group: Industrial Hydraulics Divn: Improved facilities for the production of hydraulic pumps	391	Presses. Forsyth special duty hydraulic, Examples of	529
Plugboard-controlled capstan lathe. Hand loading for an Accuratool	343	Presses. Platarg type SWS transfer	535
Plugboard-controlled milling machine. Makino type KBM ram-type	324	Presses. Rhodes horizontal impact extrusion	140
Plungers, injection, faced with bronze. Use of	387	Presses. RMT pneumatic toggle	277
Pneumatic cylinders for automatic operations on coining press. Maxam	347	Presses. stamping. Track-mounted feeding units for	573
Pneumatic drill. Bahco type B-11N portable	655	Pressing and punching. Pneumatic equipment for light	102
Pneumatic equipment for light pressing and punching	102	Pressure indicators. Improved Lucy-Gauges	625
Pneumatic impulse generator. New Enots	549	Pressure switches. Improved LucySwitch	625
Pneumatic sheet metal saw. Bahco	656	Presto single and double-roll feeds. SPS	268
Pneumatic toggle press. Keene & Tompkins	30		
Pneumatic toggle presses. RMT	277		
Pneumatic tools. New factory for the production of Ingersoll-Rand	842		
Points, centre, on taps, reamers and other tools. Junker type SH11a automatic machine for grinding	109		
Pointing machine. bar chamfering and, "Geometric" fully-automatic	675		
Polaroid (UK), Ltd: CUS Land camera	751		
Polish-built automatic-cycle heavy-duty universal milling machine	149		
Polisher and grinders. Wolf bench	30		
Polishing cloths. Fitex cleaning and	991		
Polishing. Electrolytic	214		
Polishing machine. Linisher type 436-B/D.T.6 vertical band grinding and, with built-in dust collection unit	100		
Pollard, Fredi, & Co Ltd: Rack housing machines for the motor car industry	530		
Rotary transfer machine for cylinder heads	62		
Press. Bliss No HP2-200-48-48 gear-driven high-production	816		
Press brake. Bronx 165-ton hydraulic	777		

Page	Page	Page	
Producto Machine Co:		Refractometer for monitoring cutting fluid concentration	
Tool room Equipment Divn:		728	
Roto-Recipro disc filing machine adapted for machining graphite electrodes	22	Reiden Machine Tool Works, Ltd:	
Product-O-Ron. Checking water pump bearing bores with the	717	Type FU 100 universal milling machine	101
Profile checking. Adjustable template for	807	Type KF 500 copy-milling machine	27
Profile cutters. Trend	635	Reinecker type WZS-5 tool and cutter grinder. An unusual spline grinding operation on a	980
Profile grinder. Vilar type 210 optical	548	Relay, Maxam step-up, used in conjunction with guard on 250-ton press	181
Profile turning without templates on TUAM lathe	305	Relays. FR Electronics solid-state	395
Profiling machine. Hancock Han-CO-Ordinate oxygen	32	Reliance Gear Co, Ltd:	
Profiling tool. Triform grinding wheel	272	Indic-R position indicating equipment	917
Profilmeter with inch or metric readings. Bendix	301	Tool pre-setting equipment for Hardinge lathes	448
Program. A special-purpose NC	26	Relieving attachment. J & S-Alston universal	765
Program. AUTO-DIE computer	122	Rembrandt Machine Tools, Ltd:	
Program systems. General-purpose NC computer	25	Demonstration of East German type DF 315 LNC NC lathe	458
Programme and tape control. Machining precision components under	322, 7E Mar 18, 493	Removal of metal by skiving on turning machines	362
Programme control. Machines with:		Repair of gearbox housing cover by low-temperature arc welding	130
Dowding & Dolf Accuratoool capstan lathe	343	"Repeatability". Qualification of the terms "accuracy" and, for NC positioning	869
Dowding & Dolf Accuratoool type 6D automatic-cycle turret lathe	694	Resimet bonded diamond wheels. Univen	190
Gate Winchester 125 hydraulically-operated capstan lathe	148	Resin. Acrylic, Copy machining masters made from	656
Herbert turret lathe	486	Restrictor for hydrostatic bearings. Membrane double	619
Hispano-Suiza Righi production lathe	495	Retracta dock leveller	831
Makino milling machines	322, 7E Mar 18	Reynolds, F A, Co Inc:	
Nickols Automatics EMI-MEC automatic lathe	914	Bending U-shaped components for musical instruments	478
Rouchaud production milling machine	543	Rhodes, Joseph, & Sons, Ltd:	
Stokvis TUAM production lathe	302	Horizontal impact extrusion presses	140
Programme control selection (PROCON-SEL) language for NC machining	26	New range of mechanical press brakes	628
Programme-controlled capstan lathes. Tapping on	693	Ribon Mark 2 universal grinder	151
Programmed equipment, Uni-Lec tape, for controlling stepping motors	939	Rigby, John, & Sons, Ltd:	
Programmer. The place of the part	26	Sintered parts to replace forgings	394
Programming service by Salt Engineering, NC lathe	238	Righi, Hispano-Suiza, programme-controlled lathe installed at the works of Aeronautical & General Instruments	494
Programming service. NC	636	Rimrock, Acheson, die lubrication system. Improvements obtained with Rimrock, Acheson, lubrication system for zinc die casting dies	312
Programming system. The AUTOPOL lathe	52	Rings. RKS crossed-roller slewing	467
Projector. Baty type R 20 C optical	765	296, 8E Mar 18	
Projector. Derby Inspector type LP18V horizontal optical	61	Ringway Machine Tools, Ltd	195
Projector. Herbert 400 vertical-beam optical	55	Rivers Engineering Machinery & Equipment, Ltd:	
Projector. Matrix 1000 optical	56	Cutting-off machine organization	556
Projector, PG Optidress, wheel dressing attachment	763, 1000	Riveting machine, Hot, built by RHP	511
Projector tracer for contour inspection. Ex-Cell-O	966	Riveting machine. Improved Steinle pillar	572
Prolite, Ltd:		Roberts, Sparrow & Co, Ltd:	
High Shear milling cutters	956	Installation of Redman ARM 15-ton capacity uncoiler	677
Type C-L tools with indexable tips	904	Roberts Tool Sales, Inc:	
Properzi continuous casting plant	893	Tori-Matic SCR variable speed drive	591
Prospects for the machine building industries	241	Robey & Co Ltd:	
Prosser Scientific Instruments, Ltd:		Installation of large Kumla plate bending rolls	13
Stepping-motor drive control	186	Robinson, F J, B Sc, M Phil, C Eng, M I	
Protection, die, system. Corning fluidic	151, 233, 452	Prod E, E A Inst P:	
Protection mask 1420. Polythene	138	Heidenhain LIDA electronic readout equipment for a Harrison L 6 centre lathe	258, 5E Mar 11, 476
Protective coating for metal. CeeKote	791		
Protective coating for metal. Peeloche	734		
Prototypes, Use of platens for producing, under NC	962		
Pryor, Edward, & Son, Ltd:			
Automatic electrochemical marking machine	581		
Pull-throughs for use in strip and section production. Standard	67		
Pulley. Type TL 358 torque limiting	184		
Pump. Alcosa type EM. 15 oil-free rotary blower and vacuum	182		
Pump bearing bores, Checking water, with the Product-O-Ron	717		
Pump components. Diamond honing of injection	380		
Pumps and motors. Automatic honing of small parts for hydraulic	492		
Pumps. Improved facilities for the production of hydraulic	391		
Punch press. Di-Aero type-20 NC turret	139		
Punch shaper, Thiel 132 electrode and, with closed circuit TV	557		
Punching and nibbling machine. Stripit Custom 30/30	423		
Punching and notching machine. Stripit Fabramatic NC 30/30 hole	827		
Punching. Pneumatic equipment for light pressing and	102		
Punching tool. Stripit unit	828		
Purefloy Unit Tooling, Ltd:			
Exhibits at Gauge and Tool and Power Press Exhibition	771		
Pyrometer, Mullard infrared radiation, for measuring the temperature of a heating silica tube	539		
Pyrometer. Siemens Ardometer M 250 radiation	794		
Q			
Qualifications in machine tool technology. UMIST courses for	872		
Qualification of the terms "accuracy" and "repeatability" for NC positioning	869		
Quality Control Systems:			
Exhibits at Gauge and Tool and Power Press Exhibition	778		
Qualters & Smith Bros, Ltd:			
Type PNC-50-72 NC drilling machine	587		
Queen's Award to Industry	8E Apr. 29		
Quenching fluid. Iloquench synthetic	337		
Quick-change tooling system. Rapidaptor	226		
Quick-Seal test unit. Tuthill	77		
R			
RHP Aerospace Bearing Divn:			
Hot riveting machine	511		
RIV-SKF Co.:			
RKS crossed-roller slewing rings			
Rack housing machines for the motor car industry. Pollard	530		
Rack system. Acrowrack 88 storage	831		
Radiation, Beta-, thickness gauge. Netherlands	539		
Radiation pyrometer, Mullard infrared, for measuring the temperature of a heated silica tube	539		
Radiation pyrometer. Siemens Ardometer M 250	794		
Radicon worm-gear reduction units. Producing the range of	882		
Rails. gearbox shift, Hoffmann transfer line for producing	383		
Rank Precision Industries, Ltd:			
Metroyt Divn:			
Taylor-Hobson Surtronic "miniature traverse unit" for measuring surface finish	57		
Taylor-Hobson Talyrond 100 roundness measuring machine	56		
Ransome Hoffmann Pollard, Ltd:			
Activities of the company	358		
Ransomes, Sims & Jefferies, Ltd:			
Hyster-Ransomes battery-operated reach trucks	789		
Rapidaptor quick-change tooling system	226		
Ratcliffe Engineering Co, Ltd:			
Non-magnetic single-angle sine table	117		
Ratier Forest machines for skin and keyway milling	348		
Ratier-Forest Polaxy NC milling, drilling and boring machines. W E Norton demonstrate	113		
Reactor. Thermal exhaust manifold	637		
Read-out equipment, Heidenhain LIDA electronic, for a Harrison L 6 centre lathe	258, 5E Mar 11, 476		
Read-out facility for weighing. Digital Read-out of cross-slide movements, Philips equipment for digital, on Jones-Shipman grinder	434		
Reader/printer. CAPS electrostatic microfilm	751		
Readi-Screw conveyor units. Christy & Norris	187		
Reamers and other tools. Junker type SH 11a automatic machine for grinding centre points on taps	109		
Reaming valve bodies. Diedesheim drum-type machine for	350		
Rebuilding, modernization and re-tooling of grinding machines	341		
Recorder. New Brush Datapoint	126		
Redman ARM Engineering, Ltd:			
15-ton capacity uncoiler	677		
Redman Engineering, Ltd:			
Machine for producing pre-forms by hot rolling from bar material	810		
Redman Heenan Froude, Ltd:			
Heenan VHO 41 and VHO 21 variable-speed drive units	792		
Redman Heenan International, Ltd:			
Exhibits at Gauge and Tool Exhibition	810		
High-output bumper plant for Russia	131		
Unitool notching machine for panels	806		
Reducing throughput times	1		
Reduction unit. Production of components for the Opperman Heligear	202		
Reflector. Production of an accurate	737		

Page	Page
Bristol Engine Divn:	
Large ECM installation	42
"Low-tolerance" weight-saving in aircraft engines	859
Small Engines Divn:	
Installation of Abwood rotary table surface grinder for operations on aircraft engine fixture parts	228
Rolled strips from wire	709
Rollers. Interroll conveyor	72
Rolling, hot, Redman machine for producing pre-forms by, from bar material	810
Rolling machine. Yoder section	634
Rosa cross-travelling wheelhead surface grinders	
Rotax, Ltd:	
Improved facilities for the production of ball screws	235
Rother Iron Works, Ltd:	
Rother Machine Tools Divn:	
Pneumatic toggle presses	277
Roto-Recipro die filing machine adapted for machining graphite electrodes. Product	22
Rotors. air-motor, Special indexing fixtures for	206
Rotran de motor tachogenerator units	915
Rouchaud et Lamassiaude, Ets:	
Type FV 80 C 113-115 automatic-cycle vertical-spindle production milling machine	543
Roundness measuring machine. Goulder Mikron type R1 20	770
Roundness measuring machine. Taylor-Hobson Talyrond	56
Rounthane hollow round belting	105
Rowe Machinery & Manufacturing Co:	
Track-mounted feeding units for stamping presses	573
Rowe, W B:	
Design of conical hydrostatic journal bearings	
Design of opposed-pad hydrostatic bearings for machine tool slideways	
Rubber-Flex collets for use on single-spindle automatics. Jacobs	768
Rubber mouldings. Air Products Cryo-Trim deflashing equipment for	
Rudert & Co, Ltd:	
Copy machining masters made from Acralite resin	656
Rudkin & Riley, Ltd:	
Carlisle Equi-Spacer attachment	269
Rules, metric, Moore & Wright multi-anvil and direct-reading micrometers and	541
Rules, Moore & Wright steel, with graduations marked in saw tooth form	812
Rushworth & Co: (Sowerby Bridge), Ltd:	
Mini-Brake mechanical-type press brake	
Russell, S & Sons Ltd:	
One Hundred automatic cold saw	422
Russia. Redman high-output bumper plant for	131
Russian machine tools. Some new	936
Rust and corrosion preventives. Mobilarmo	390
Saws. Brake for Trennjaeger friction cold	356
Sawing machine. Large Ty-Sa-Man aluminium-plate	216
Sawing machine. Wahlen-Rekord cold	268
Scarborough, C G:	
Special purpose NC program	26
The place of the part programmer	26
Schaffner milling machine modified for chamfer grinding operations	632
Schaublin rotary transfer machines installed at the works of W Lucy & Co	738
Schaudt type B 810 ST 1000 NC angular-head grinder, Herbert-BSA use, for lathe spindles	223
Schenk mass-centring machines for crankshafts	118
Schless A G:	
Gantry mill for plano-milling operations	568
Type 5YKE 800/1300NC/C vertical turning and boring mill	571
Type DKE 16/NC/C vertical turning and boring mills at Henry Wiggin	352
Scholes, J P, MSc:	
Iron castings for machine tools	96
Schrader's Son, A, Divn of Scovill Manfg Co:	
Hand-operated 4-way disc valve	183
"Self-reciprocating" air cylinders	623
Schuler Presses, Ltd:	
Exhibits at Power Press Exhibition	814
Scientific Control Systems, Ltd:	
Capital investment in manufacturing industry	7
Scotcast No 260 powdered epoxy resin used for insulating stators	11
Scovill Schrader:	
Self-reciprocating air cylinders	623
Scrap reclamation process. Steel	587
Screen. Arcmaster Perspex	851
Screw conveyor units. Christy & Norris Readi-Screw	187
Screw. Danfoss Orbis motor drive for injection moulding	221
Screw jacks. Opperman machine	831
Screw orientator. Churchill headless	498
Screws. Rotax ball, Improved facilities for the production of	235
Sealectro, Ltd:	
Sealectroboards for control of plating plant	130
Seaming machine for round motor car silencers. ZR automatic	270
Section production. Standard "pull-throughs" for use in strip and	67
Section rolling machine. Yoder	634
Security key switch	534
Segregators. Improved Teledictor	229
Sellotape Products, Ltd:	
Industrial Sales Divn:	
Carbon fibre tape research	99
Polythene protection mask 1420	138
Selson Machine Tool Co, Ltd	
158, 215, 231, 272, 425, 637	
Sensing units. Corning fluidic	699
Sensor, Norgren impacting jet, for detecting drill breakage by fluidic means	915
Sequence-controlled automatic turret lathe. Manurhin Decomat 50 t, pe C	544
Serk Audo:	
Shell moulding reduces or eliminates machining	12
The cell-system of batch production	82
Serk Glocot:	
New control valves and actuators	741
Serk Radiators:	
Serclean self-cleaning fluidic strainer	74
Serk (Storactor Department):	
Storactor linear electric actuator	183
Services for production engineering. Braemer	370
Servo-drive system for NC and copy machining. Hyper-Loop electric	916
Servo-valves. Moog fluidic/hydraulic interface	624
Servomatic quill-feeding and slide-base type unit heads. Herbert	66
Servotrol Controls, Ltd:	
NC 70 numerical control system	753
Sethna, R, ACA:	
Capital investment in manufacturing industry	7, 76
Setpoint, Ltd:	
Optical gauge for continuous measurement for hot-rolled rod	70
Shaft assembly incorporating four sintered shaft support brackets. BLMC engine rocker	752
Shaft designed and made in one day using computing and NC techniques	687
Shaft-stopping unit. Greenberg	624
Shafts, 1000 cold-extruded half-, per shift	430
Shapes. checking workpiece, The Temco Formulator for	807
Shaping machine, Thiel 132 electrode and punch, with closed circuit TV	557
Sharpening form milling cutters. Aldridge Mark 3 contour grinder for	767
Sharpness indicator. Tool	222
Shaw, John, & Sons (Salford) Ltd:	
1250-ton powder metallurgy press	406
Shaw precision casting process. Production of prototype zinc die castings by the	668
Shear, Auto, Cincinnati NC	797
Shear. Tennox 50 sheet	478
Shears. Bombed types 209KH and 209 DA guillotine	545
Shears, flying. Allen West electronic control equipment for	972
Shearing machine. Elgin Hydrashear guillotine, Work support unit for	828
Sheet metal saw. Bahco pneumatic	656
Sheet metal-working machines. Demonstration of	827
Sheet shear. Tennox 50	478
Sheet slitter. Cincinnati series 16S12	877
Sheet steel stockholding warehouse. New	
Lve Steel	392
Sheffield Automation Advisory Centre:	
The work of the	688
Sheffield Cordax measuring machine. Large	249, 320
Sheffield Twist Drill & Steel Co, Ltd:	
Exhibits at Tool and Gauge and Power Press Exhibition	764
Sheffield University:	
Technological forecasting	89
Shell investing plant. Fully-automatic ceramic	713
Shell moulding machine for the Ferranti foundry. New	638
Shell moulding reduces or eliminates machining	12
Sherpa 700 series pallet truck of 3000 lb capacity. Hestair	834
Shin Nippon Koki Co, Ltd:	
Shine-Matic type TM-2H-NC-ATC machining centre	91, 856
Ships' plates of high tensile steel. Hugh Smith press of 2800 tons rating for roll-bending	278
Shipyard, Totally-enclosed, opened	676
Shock absorber. Hydraulic	624
Shock hardening	420
Shoes. Moulded nylon contact, for motor car distributor units	873
Sick, Erwin:	
Colour detectors	221
Siemens (UK) Ltd:	
Exhibits at Electrex '70 International Electrical Engineers Exhibition	794
Sigma electronic edgewise indicator of 8-channel type	55
Sigma gauging equipment. Improved facilities for production and sales of	998
Silencers. Automatic line for producing motor car	14
Silencers. ZR automatic seaming machine for round motor car	270
Silica tube. measuring the temperature of a heated, Application of a Mullard infrared radiation pyrometer for	539
"Silo" attachment for INA vibratory bowl feeder	830
Simms, T E, FIEE:	
Digital readout system	476
Sine table. Largest Windley metric	636
Sine tables. Ratcliffe non-magnetic single-angle	117
Singer Manufacturing Co, Ltd:	
Filtration of hydraulic fluids on die casting machines	979
Sintered components for torque spanners	382
Sintered ferrous materials. Turning and drilling some typical	179
Sintered oil pump gears	457
Sintered parts used in place of forgings	394
Sintered preforms for forging	277
Sintered shaft support brackets incorporated in BLMC engine rocker shaft assembly	752
Sizing and surface-finishing holes in metal parts. Application of Ballizing-a technique for	388
Skefko Ball Bearing Co, Ltd:	
Installation of King swarf crushing and centrifuging plant	902
Skin and keyway milling. Rattler-Forest machines for	
Metal removal by, on turning machines	348
Skiving. Metal removal by, on turning machines	362
Skiving tool developments	121
Skoda Car Works:	
Machining of gravity and pressure die cast motor car components	982
Slat-band chain application. "New Conveyor" stainless steel	153

S

SI, Some aspects of, and its use	73
SMC Co:	
Insulating stators with powdered epoxy resin	11
SME Tool Exposition, Detroit. Some aspects of the	854
Safan upstroking press brakes	422
Safe Production Systems:	
Presto single and double roll feeds	268
Sajo milling machine agency	797
Salami hand-operated directional-control spool valves	186
Salt Engineering (Coventry), Ltd:	
NC lathe programming service	238
Sandens Mekaniska Verkstad AB:	
Arrangements for sale of Sajo milling machines in UK	797
Sander. Improved Super Stork 7000 orbital	511
Sanders and grinders. Wolf Super Seven range of Sapphire	907
Sandvik (UK), Ltd:	
Coromant GC carbide	702
Exhibits at Gauge and Tool and Power Press Exhibition	769
Savings with the use of an NC horizontal boring and milling machine	682
Saw. Bahco pneumatic sheet metal	656
Saw chain for cutting soft metal	849
Saw, jig. Trend type TR/577 variable-speed	225
Saw. Russell One Hundred automatic cold	422

Page	Page		
Slater, R A C: Rotary forging	538	Spindles. grinding heads and, Extended range of Wright	154
Stewling rings. RKS crossed-roller	296	Spindles. lathe, Herbert-BSA use NC grinding machine for	223
8E Mar 18		Spindles. Some applications of Westwind air-bearing	730
Slides. micrometer, Unimatic modular	829	Spiral carbide cutters ground on Ward machines, Marwin	255
Slideway grinding, Additional capacity for, at the works of Litton's Machine Tool Co	837	Spline grinding machines, Kapp	629
Slideways. Design of opposed-pad hydrostatic bearings for machine tool	407	Spline grinding operation. An unusual	980
Sliplock face milling cutters. Galtona	997	Splines and gears. Automatic pot broaching of external	654
Slitting machine. Cincinnati series 16S12 sheet	877	"Spotting" drill rig, Wayte	626
Slitting machine. Nishimura type-TM metal	37	Spray booths. Volspary "Metric" dry filter	50
Slo-Syn NC for laser-beam drilling equipment	671	Spraying. Coating with nickel by metal spraying, plasma-, technology service. AED	17
Slotting machine. Menn type KS 5 planetary screwhead	944	Spring looping machine. BUD International	944
Small-batch production of valves. Group technology and machining cells in the Smit Nijmegen N V	2	Spring making machine, Bennett, with lion pitch control unit	944
Smith Associates: BoreMat boring and facing head	31	Spring "untangler". Churchill automatic Staffa B10 hydraulic motor	433
Smith, C & B, Ltd: New automated foundry	88	Stainless steel fabrication by APV-Desco (Ireland), Ltd	343
Smith, Hugh, (Glasgow), Ltd: Large export order	278	Stainless Steel Plant, Ltd	608
Press of 2800 tons rating for roll-bending ships' plates	278	Stakenut, The Telco	608
Smith, William G: Optimization of hob design for maximum accuracy	947	Stamping presses. Track-mounted feeding units for	573
Smiths Industries Ltd: Examples of precision investment castings	470	Stand, Tool, for NC machines	647
Industrial Instrument Divn: Venture "machine-to-size" position indicating equipment	852	Standardisation work on modular machine tool units	394
Venture type M electric tachometer	217	Spanho Machine Tools, Ltd	543, 548
Snyder Corporation: Helical cam track milling machine	331	Stankomatic 7 and 16 sliding headstock	937, 938
Duplex boring machine	372	Stankomatic type 6605 duplex production milling machine	936
Snyder, Ltd	331	Stamill Co, Ltd: Mobile press conveyor	476
Soag Machinery Ltd: First Soag-built Wotan-VWF die casting machine for export	823	Starrett, L S, Co, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	772
Societe de Signalisation Automobile Seima: Du Pont immersion heat exchanger for plating tank	638	Startrite Machine Tool Co, Ltd: Types 20RF and 20RW bandsawing machines	583
Soldering machine. Tangential dip	895	Stat Systems, Ltd: Modified pre-setting equipment for clamped-tip turn tools used on Heinemann lathe	53
Solex (Gauges), Ltd: Exhibits at Gauge and Tool Exhibition	811	Static switching system. Logicon 2	834
Solid-state control unit. PDP-14 pre-wired	916	Stators insulated with powdered epoxy resin	11
Solid-state logic modules for machine tool control	611	Staveley Machine Tools, Ltd: Overseas trade in machine tools	76
Solid-state power supply unit for use with EDM equipment. Cincinnati Cintrojet	855	Steel, cutting, Bronx "cut-up" line installed in Canadian works for	394
Solid-state relays. FR Electronics	395	Steel, Penetral-treated, instead of high-nickel materials	110
Solid-state switching equipment for machine tools	186	Steel scrap reclamation process	587
Solvac 810 - a new water soluble oil	397	Steel, Stainless, fabrication by APV-Desco (Ireland), Ltd	609
Sonicleaner type 6442A ultrasonic cleaner. Dawe	528	Steel - supply and demand	481
Sound measurement. Dawe equipment for Sound testing equipment. Brøel & Kjaer	444	Steels. Experience in the machining of ultra-high strength	175
South Durham Steel & Iron Co, Ltd: Large pipes expanded by water pressure	862	Steering knuckles. Bühr trunnion-type machine for operations on	588
Spacing attachment. Carlisle Equi-Spacer angular	269	Steinle, Bernard: Improved pillar riveting machine	572
Spanish-built Juriasti universal grinder	151	Multi-spindle machine with feeding table	23
Spanners. Sintered components for torque	382	Stella-Meta Filters: Type D Metalfilter	316
Sparrow, R, (Leicester) Ltd	673	Sten-Ake Kvist: Turning and drilling some typical sintered ferrous materials	179
Spears & Jackson, Ltd: Saws used on large Ty-Sa-Man aluminium-plate cutting machine	217	Stepping-motor drive control. Prosser	186
Special-duty hydraulic presses. Examples of Forsyth	529	Stock-holding centre for Dunlop & Ranken. New Wolverton	995
Special-purpose machines by Worcester Automation	106	Stock picker" truck. Powell	972
Speck, Robert, Ltd	76	Stokvis, Ateliers: Developments in connection with TUAM lathes	302
Speed controller. Zenith Varispeed dc motor	487	Stopping, shaft, unit. Greenberg	624
Speedfinisher, White heavy-duty, for dry or wet working	867	Storactor linear electric actuator	183
SpeedRanger drive system. Hainsworth	830	Storage and dispensing equipment. Dynaflex fluid	701
Speedsander. White type SPD 40-in wide abrasive-belt	863	Storage cabinet installation. Bruynzeel mobile	61
Spencer & Halestad, Ltd: Oil mist collector	834	Storage installation, Large King Triax, at the Perkins works	509
Spencer Franklin, Ltd: Hydraulic clamping units incorporated in Kango turning fixture	607	Storage rack system. Acrowrak 88	831
Spenceloc unit clamping equipment in use at Haworth	687	Storage system, New tool, at the works of Baker Perkins	589
Sperry Rand, Corporation, USA: Univac Federal Systems Divn: Use of Bendix tape preparation equipment	853	Storage unit for taper shank-tools. Linbin	312
Uniscope 300 keyboard-operated visual communication terminal	354	Straitening blanks for twist drills, taps and other items. Junker type VRJ 11 automatic machine for	109
Sperry Rand, Ltd: Univac Divn: 1557/1558 graphic display sub-system	752	Strainer. Serclean self-cleaning fluidic	74
See also	354	Strasmann, Brooke-, shell milling cutter and end mill	772
Stresser Mark 3 equipment for providing control of braided electrical heating elements. Cooperheat	906	Stresser Mark 3 equipment for providing control of braided electrical heating elements. Cooperheat	906
Strip and section production. Standard "pull-throughs" for use in	67	Strip coil control unit for metal, Clark's transistored	817
Strip. Electron beam welded bi-metal	227		
Strip. Increasing use of coated	37		
Strip uncoilers. Redman ARM	677		
Strips rolled from wire	709		
Stripping machine for fine wire. Eubanks type 88	385		
Strippit Custom 30/30 punching and nibbling machine	423		
Strippit Fabramatic NC 30/30 hole punching and notching machine	827		
Strippit unit tools for presses and press brakes	828		
Strobe Automation, Ltd: Type 3K modular power stroboscope	135		
Stroboscope. Strobe Automation type 3K modular power	135		
Strohm automatics. Demonstration of Sturdimill 1000, 1100 UK, and 1500 milling machines. Elliott	68		
Suction equipment for machine cleaning. Intec-Boy	168		
Summers-Smith, Dr. D: Fundamentals of wear	169		
Sun Oil Co: Sunvis 747 oil for lubrication and hydraulic systems	492		
Suparouter cutters. New Marwin	256		
Super Hi-Pro single-die 2-blow high-speed heading machine. Waterbury Farrel	264		
Super Oil Seals & Gaskets, Ltd: Hose Divn: Effective application of Wickman automation	207		
Super Seven range of Sapphire sanders and grinders. Wolf	907		
Super Stork 7000 orbital sander. Improved Superior Electric Nederlands, NV: Slo-Syn NC for laser-beam drilling equipment	511		
Superior Electric Nederlands, NV, UK	710		
Support. work clamping and, Power Jacks hydraulic equipment for	773		
Surface cleaning, metal. Developments in the Vacmac system of	903		
Surface finish, measuring. Taylor-Hobson Surtronic "miniature traverse unit" for measuring surface finish. Taylor-Hobson	57		
Surface-finishing holes in metal parts. sizing and, Application of Ballizing - a technique for	388		
Surface roughness peak counter. Bendix Surtronic "miniature traverse unit" for measuring surface finish. Taylor-Hobson	994		
Sverdlov Plant: Stankomatic 16 and 7 sliding-headstock	937		
Swarf crushing and centrifuging plant at Skefko works. King	902		
Swarf and refuse truck. Powell	6		
Swedish Machine, Co, AB: Opening of Government factory for NC machine tools	956		
Swedish Machine Tool Co, Ltd: 33, 797, 956			
Swindon College: Proposals for the training of technicians	596		
Switch. Security key	534		
Switches. Improved LucySwitch pressure	625		
Switchgear components. Highly-efficient use of NC turn-type machines for operations on	562		
Switching equipment for machine tools. Solid-state	186		
Switching system. Logicon 2 static	834		
Sykes Machine Tool Co, Ltd: 112, 235, 238, 350			
Symot, Ltd	168		
System E range of gauging units and control modules	777		
Systematic Tooling, Ltd: Machine Tool Divn: Exhibits at Gauge and Tool Exhibition	772		
See also	226		
Système Internationale, Some aspects of, and its use	73		
Systems International (UK), Ltd: Computer systems and services	518		
Szafarczky, M, M Sc: Control of tool temperature	76		
Influence of cutting temperature on wear of high-speed steel tools	332		

Page	Page	Page			
TOS Kurim: Type VIR multi-purpose machines	270	Tell-Tale filters for hydraulic systems of die casting machines	979	Tocco Divn: Park-Ohio Industries, Inc: Fusing nylon to metal by induction heating	296
TRW Valve Stem Divn: Fusing nylon to metal by induction heating	296	The Temco Formulator and the Temco Comparator	807	Toggle press. Keene & Tompkins pneu- matic	30
TUAM lathes. Developments in connection with Stokvis	302	Temperature. Control of tool	76	Toggle presses. RMT pneumatic	277
Table. feeding. Steinel multi-spindle machine with	23	Temperature of a heated silica tube. Mullard infrared radiation pyrometer for measuring the	539	Tool and cutter grinder. Hispano-Suiza Albula universal	22
Table. indexing. Moss 360-station	490	Temperature, Influence of cutting on wear of high-speed steel tools	332	Tool and cutter grinder. Vilar type 205	548
Table. Largest Windley metric sine	636	Template, Adjustable, for profile checking	807	Tool and cutter grinder. Ward Cutter Master No 1	766
Table. Moore No. 3 Micro-Sine	584	Template-controlled work-table. Mill- Drill	993	Tool changer. automatic, Moog Hydra- Point machining centre with	472
Tables. Ratcliffe non-magnetic single- angle sine	117	Templates. Multiple-diameter, for con- trolling copy turning operations	884	Tool changing equipment, Automatic, on TUAM type CT 8 lathe	305
Tables. Tata co-ordinate	415	Tennox 50 sheet shear	478	Tool pre-setting equipment for Hardinge turret lathes	448
Tachogenerator units. Rotran do motor/	915	Tenth-Matic control system for down feed on Thompson-Matrix surface grinder	992	Tool pre-setting equipment. Kelch	127
Tacho-motor housing. Machining pre- cision components for, under pro- gramme control	496	Terminal equipment. Vernitron type DT- 104 Data Port portable	353	Tool sharpness indicator	222
Tachometer. Smiths Venture type M electric	217	Terminal unit. Uniscope 300 keyboard- operated visual communications	354	Tool stand for NC machines	647
Tailstock turret head. H C F	100	Terminals. Ferranti range of display	750	Tool storage system at the works of Baker Perkins. New	589
Talyron 100 roundness measuring machine. Taylor-Hobson	56	Test unit. Tuthill Quick-Seal	77	Tool temperature. Control of	76
Tangent radius wheel dresser. Diaform	630	Testers, hardness. Eseway SPR and SPRG	59	Tools. Diagrit cutting, with disposable carbide inserts	770
Tangential form grinding. Application of	782, 802	Testers, hardness, for plastics and rubber. Wilson	528	Tools for presses and press brakes. Strippit unit	828
Tanks for milk, mineral water, etc. Fabrication of stainless steel storage	608	Testing equipment. Branson ultrasonic thickness	287	Tools. high-speed steel. Influence of cutting temperature on wear of	332
Taps and other tools. Junker machines for operations on	108	Testing machine, Rockwell hardness, with digital read-out	580	Tools with indexable tips. Prolite type C-L	904
Tape, Carbon fibre, research	99	Testing of gearboxes for commercial vehicles. Efficient manufacture, as- sembly and	722	Tooling and pre-setting equipment. Kaiser	965
Tape control. Machines with (see Numeri- cal control. Machines with)		Testing of the 1485-cc E-series engine for the Maxi car. Production, assem- bly and	402, 522	Tooling for ECM	294
Tape control. Machining precision com- ponents under programme and		Thermal exhaust manifold reactor	637	Tooling system. Rapidaaptor quick-change	226
322, 7E Mar 18, 493		Thickness gauge. Netherlands beta- radiation	539	Tooling up for productivity	371
Tape-preparation equipment. Bendix	853	Thickness of piston rings. Fully-auto- matic inspection fixture for checking the radial	554	Toroidal cutters for NC contouring opera- tions on titanium. Use of	413
Tape-programmed equipment for control- ling stepping motors. Uni-Lec	939	Thickness testing equipment. Branson ultrasonic	287	Torq-Matic SCR variable speed drive	591
Tape recorder heads. Use of Westwind air- bearing spindles when milling slots in	731	Thickness, wall, of fuel element cans. Automatic measurement of	804	Torque limiting pulley. Type TL 358	184
Tape-Turn IV NC lathe. LeBlond	856	Thiel 132 electrode and punch shaper with closed circuit TV	557	Torque spanners. Sintered components for	382
Tapes. preparation of control, ITT Envoy electronic data printer for	285	Thompson, John, Ltd: Fabrication Divn: Welded-steel chimney flues for Drax power station	935	Torvac, Ltd: Series 24 vacuum furnace	36
Tapholders. Additional Morrisflex type MJ	343, 767	Thompson-Matrix surface grinder with Tenth-Matic control system for down feed	992	Type 3 furnace controller	908
Tapping and drilling machine, Special, for Newman motor end frames	552	Thompson, Raymond F. (Engineers) Ltd	416	Towing equipment. Production of com- ponents for, improved by automation	688
Tapping. Endomatic type MC machine arranged for milling, drilling and	790	Thomson Industries, Inc: Mill-Drill template-controlled work table	993	Trabant 600 tool pre-setting equipment. Kelch	127
Tapping head. Meddings type HTH25 pitch-controlled	105	Thorn Bendix, Ltd: Industrial Measurements Divn	249, 795, 938	Tracer-controlled milling machine. Large Wilson 6-spindle	371
Tapping machine. Taurus 4-spindle	425	Thorpenco clamp units	325	Tracer, Ex-Cell-O projector, for contour inspection	966
Tapping machines. Waddin "family" of double-column NC milling, drilling, boring and	779	Thread-chasing lathe. Herbert Cri-Dan type CT high-speed copying and, Demonstration set-up on	66	Tractor bonnets. Spot welding operations on	234
Tapping on programme controlled cap- stan lathes	693	Thread grinder, Matrix type 70, for ball screws	236	Training, Module craft, and its application in small and specialist firms	507
Tarex (England), Ltd	302	Thread milling machine. Lambert type 124 worm and	584	Training of technicians. Proposals for the	441, 596
Tata Engineering & Locomotive Co, Ltd: India:		Thread rolling machines. New Waterbury Farrel cold heading and	264		
Telco Divn:		Thread rolling techniques demonstrated at International Wire Exhibition	945		
Drilling and boring machines and		Threads? Coarse- or fine-pitch metric	457		
press tool service	414	Threads. Hobormill machine for hobbing and milling gears and	344		
Tata, Ltd	414	Threads on neck-ring moulds for glass and plastics containers. Machine for milling standard and non-standard	617		
Taurus 4-spindle tapping machine	425	3-dimensional co-ordinate measuring machine. Matrix	835		
Taylor & Challen, Ltd:		3D inspection machine. Electronic attach- ment for centre finding for operation on DEA Beta	58		
DSRIE-100-24-27 double-sided crank		3M Company: Scotcast No. 260 powdered epoxy resin used for insulating stators	11		
press	815	3-roll piercing technique for tube pro- duction	18		
Exhibits at Gauge and Tool and Power		Throughput times. Reducing	1		
Press Exhibition	775, 815	Throw-away tip adjustable boring bar. Dormer	764		
Taylor-Hobson Surtronic "miniature traverse unit" for measuring surface	57	Times, cycle, for NC machining. A method of quickly estimating	134		
finish					
Taylor-Hobson Talyron 100 roundness					
measuring machine	56				
Taylor, Robert, Machine Tools, Ltd: New premises at Stratford-upon-Avon	838				
Teapod body. catering. Use of Rocol RL- 5 in producing a	517				
Tecam fluidized bath for cleaning plastics	729				
extrusion dies					
Techne (Cambridge), Ltd: Tecam fluidized bath for cleaning					
plastics extrusion dies	729				
Technical Lapping Co, Ltd: 20-in lapping machine	629				
Technicians. Proposals for the training					
of	441, 596				
Technological forecasting	89				
Teknova lubricators. Kay-	588				
Telco, Ltd:					
The Stakenu	716				
Telcon Metals, Ltd:					
Teflow beryllium copper cavities for					
plastics moulds	627				
Telcon Plastics, Ltd:					
Telcoset 401/E rapid-curing epoxy					
powder	107				
Teledictor, Ltd:					
Improved segregators	229				
Teleprinter components. NC applied to					
large batch production of	282				
Television. closed circuit. Thiel punch					
shaper with	557				

	Page
Transport Equipment Thorneycroft, Ltd: Installation of Schaffner milling machine modified for chamfer grinding operations	632
Transworld Data Systems, Inc: Exhibits at Data Communications Exhibition	353
Traub Automatics, UK, Ltd: Demonstration of Traub and Strohm automatics	951
See also	743
Traub, Herbert, Maschinenfabrik: Automatic for machining and assembly at one set-up	742
Demonstration of automatics at British agents' showrooms	951
Traverse unit, miniature, for measuring surface finish. Taylor-Hobson Surtronic	57
Trend Industrial Equipment, Ltd: Profile cutters	635
Type TR/577 variable-speed jig saw	225
Trennjaeger (Gt. Britain), Ltd: Brake for friction saws	356
Triax store at the Perkins works. Large King	509
Tribology in powder metallurgy. Conference on	179
Trieus Industries, Ltd: Exhibits at Gauge and Tool Exhibition	809
M 170 flared cup diamond wheel	998
Triform grinding wheel profiling tool	272
Tri-plate. Extruded-section aluminium	412
Truck for die and mould handling. Lift Truck. Greenwood & Battley elevating platform	128
Truck, Hestair Sherpa 700 series pallet, of 3000 lb capacity	579
Truck, Iso-Speed pallet handling	834
Truck, New Yale 3-wheel lift	895
Truck, Powell swarf and refuse	6
Truck, Powell "stock picker"	972
Truck, Weel-Easi bogie, for loads up to one ton	807
Trucks. Hyster-Ransomes battery-operated reach	789
Trucks. Improved Robur stacker	459
Trunnion-type machine for operations on steering knuckles. Buhr	588
Tube bending machine. Addison Universal 50 hydraulic	105
Tube bending machines. Hilgers NC and large-capacity	230
Tube-end milling machine. Addison-Leonard 35 Tubemill	631
Tube Investments, Ltd	18
Tube piercing technique. 3-roll	18
Tube, seamless, £10 million continuous mill for	18
Tubes, Shaping, by electro-chemical grinding	212
Tubes, Tangential form grinding of Tubemill tube-end milling machine. Addison-Leonard 35	783
Turbine blades, Drilling, by ECM	50
Turbine, gas, Large ECM installation at Rolls-Royce for production of components for the Olympus	42
Turner, Henry, (Machine Tools) Ltd	632, 657
Turner Machine Tools, Ltd: Linisher type 436-B/D T6 band grinding and polishing machine with dust collection unit	100
Turner Manfg Co, Ltd: Flow-line practice in the manufacture, assembly and testing of gearboxes for commercial vehicles	722
Turning and boring mill. Schiess type 5VKE 800/1300NC/C vertical	571
Turning and boring mills. CNMP-Berthiez type TF vertical	542
Turning and boring mills, Schiess type 16 DKE NC/C vertical, installed at Henry Wiggin & Co	352
Turning and drilling some typical sintered ferrous materials	179
Turning fixture for a component part for an aircraft engine. Leytool	762
Turning fixture with built-in hydraulic clamping	607
Turning machines. Metal removal by skinning on	362
Turret head. H C F tallstock	100
Turret head NC machine tool	286
Tuthill Pump Co, U.S.A	77
Twist drills, Producing, in Ireland	575
Twist drills, type and other items. Junker type VRJ 11 automatic machine for straightening blanks for	109
Ty-Sa-Man aluminium plate cutting machine. Large	216
Tyre for rotary cement kiln. 100-ton steel casting for	116
Tyre moulds. Bendix gauge for	126

U

U-shaped components for musical instruments. Bending	478
UKAEA Group Technology Centre: Group technology and the cell system	198
UMIST courses for qualifications in machine tool technology	872
U S machine tool exports	8E Jan 28, 398, 8E Mar 4, 5E May 13, 8E Jun 3
USI Clearing cold extrusion press	431
Udal, J P, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	778
Hood guard for CVA dieing presses	610
Ultrafine range of fine-boring machines. Herbert	592
Ultrasonic cleaner. Dawe low-cost	528
Ultrasonic cleaning plant for printed circuit production line	117
Ultrasonic cleaning units. Kerry Compact	506
Ultrasonic machine. 15-in disc of 0.01-in molybdenum machined on Bendix Sheffield	748
Ultrasonic Mini Cleaners. Dawes series 6576	34
Ultrasonic thickness testing equipment. Branson	287
Uncoller. Redman ARM	677
Uni-Centre principle of co-operation between machine tool builders and users	129
Uni-Neven Resimet bonded diamond wheels	190
Unicast Development Corp: Licence for making carbon products by new RAE process	957
Undare, Ltd: Some activities of the company and subsidiary companies	889
Unimatic Engineers, Ltd: Modular micrometer slides	829
Uni-Lec tape-programmed equipment for controlling stepping motors	939
Uniscope keyboard-operated visual communication terminal units	354
Unit clamping equipment, Spenceloc, in use at Haworth Engineering	687
Unit construction for boring machines	592
Unit construction or modular construction	721
Unit construction. Wadkin "Family" of double-column NC machines of	779
Unit head machines. Australian Fabricmatic	514
Unit heads. Herbert Servomatic quill-feeding and slide-base type	66
Unit tools for presses and press brakes. Strippit	828
United Kingdom Atomic Energy Authority: Exhibits at 54th Physics Exhibition	512
United Machinery Sales Co, U.S.A	14
Unitool notching machine for panels. Redman	806
Univac 1557/1558 graphic display subsystem	752
"Universal" 60 hydraulic tube bending machine. Addison	105
University of Aston in Birmingham: Some aspects of SI and its use	73
University of Birmingham: Birmingham Graduate School of Machine Tool Technology and the Integrated Graduate Programme	219
Opening of new engineering production building	597
Sintered preforms for forging	277
University of Manchester: Group technology and the cell system	318, 757
UMIST courses for qualifications in machine tool technology	872
University of Sheffield: Technological forecasting	89
University of Technology, Loughborough: Concrete in machine tools	703
University, The Open - are its potentialities being exploited?	801
University. Warsaw Technical: Influence of cutting temperature on wear of high-speed steel tools	332
"Untangler". Churchill automatic spring	433
Used machine tools. Imports and exports of	8E Jan 7, 8E Feb 11, 8E Mar 11, 8E May 6, 8E June 3
Uzina Rulmentul Brasov: Forging technique improves ball bearing life	648

V

"V Thread Roller" machine. Waterbury Farrel	267
---	-----

	Page
VDF Autoprogrammer programming equipment, Installation of, at works of Salt Engineering	238
VDF type V 800 NC lathe, Operations on the, at the works of Rolls-Royce	111
Vacnad system. Developments in the	903
Vactric Control Equipment, Ltd: Exhibits at Instruments, Electronics and Automation Exhibition	916
Vacuum cleaner, B V C type TH 6 heavy-duty	337
Vacuum Generators, Ltd: Exhibits at Physics Exhibition	540
Vacuum impregnation technique for crack detection	90
Valecky, Ing J: Machinability of aluminium alloys for pressure die casting	982
The functions of overflow wells in pressure die casting	876
Valve bodies. Diedesheim drum-type machine for reaming	350
Valve components. hot water mixing, Group technology applied to the production of	482
Valve. Drallim series 20 control	623
Valve. Enots 3-way exhausting	185
Valve. Miniature air	622
Valve operating unit for use as an interface between fluidic and high-pressure pneumatic equipment. Norgren ultra-sensitive	699
Valve. Schrader hand-operated 4-way disc	183
Valves and actuators. New Serck Glocor control	741
Valves for controlling oil operating from fluidic signals	696
Valves. Fraser K & L range of proportional hydraulic control	198
Valves, Lucas relief and replenishing, for industrial hydraulic applications	185
Valves. Norgren Fluidics multi-position selector	698
Valves. Salami hand-operated directional-control spool	186
Valves. servo-, Moog fluidic/hydraulic interface	624
Valves. small-batch production of, Group technology and machining cells in the	2
Van. Norgren exhibition	757
Variables. die casting, Brush system for determining	824
Variomatic rotary transfer machine installed at W Lucy & Co. Hahn & Kolb	738
Varispeed dc motor speed controller	487
Vaughan Associates, Ltd: Film: Vaun/Bodine assembly machine	956
See also	383, 545, 629
Vaughan, F E, Ltd	584
Vaun/Bodine machine. Components for windscreens washer pump assembled on Venture "machine-to-size" position indicating equipment. Smiths	852
Venture type M electric tachometer. Smiths	217
Vernier, G, SA: Type FV 380 knee-type milling machine	547
Vernitron Corporation: Type DT-104 Data Port portable terminal equipment	353
Vero NC Developments, Ltd: NC drilling machine for printed circuit boards	808
Turret-type NC drilling machines installed at W Lucy & Co	562
Vero Precision Engineering, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition	808
Versatran robot. Die casting production increased by AMF	825
Verti-Broad broaching machine. Hi-Ton	585
Vertomat 8-station rotary transfer machine at SME Show. New	701
Vibration. Failure predicted by very high frequency	899
Vibration indicator. Cosmocord type A8982	627
Vibratory bowl feeder with "silo" attachment. INA	830
Vibro-Shear cutting and forming machine. Cutting circles in mild steel sheet on a	836
Vices. Tata machine	416
Vickers Newcastle-upon-Tyne works. New lighting system with Mazda Kolorlux lamps installed at	75
Vilar, Ets, G: Type 210 optical profile grinder	548
Type 205 heavy-duty tool and cutter grinder	548
Vision Engineering, Ltd: Circuitmaster equipment for rapid printed circuit assembly	267
Comparascope inspection instrument	412
Volkswagen. Cold forming gear blanks on a transfer press at	890

Page	Page	Page				
Volspray, Ltd: "Metric" dry filter spray booths ..	50	Welding gun and master control unit. ARO spot ..	907	Winder, filament, Goldsworthy type QCM-10A ..	421	
Voucher 57 cutting-off machine ..	813	Welding, low-temperature, Gearbox housing cover repaired by ..	130	Windley Bros, Ltd: Largest metric sine table ..	636	
W			Welding machine, Automatic butt, installed at TI Stainless Tubes ..	477	See also ..	683
WDS Tooling Aids, Ltd: Some examples of parts for jigs and fixtures ..	809	Welding machine for tubes. Melesco butt Welding, MIG and CO ₂ , AGAmig 200 equipment for ..	909	Windscreen washer pump components assembled on Vaun/Bodine machine ..	957	
Wadkin, Ltd: "Family" of double-column NC machines ..	779	Welding of drums with Lincoln Electric automatic submerged arc welding plant ..	587	Winters, Ernst: Needle Fliesen diamond dressing tools ..	955	
Type TH Mark 3 NC drilling machine installed at Aeronautical & General Instruments ..	493	Welding operations on tractor bonnets. Spot ..	234	Wire cutting and stripping machine. Ebanks high-speed electronically-controlled ..	795	
Wahlen-Rekord cold sawing machine ..	268	Welding technique. MIG, BICC process for jointing high-tension aluminium cables by ..	794	Wire drawing ..	889	
Wakefield, R G: Design development for pressure die casting ..	307	Welding unit. Hobart "micro-wire" ..	798	Wire Exhibition. Second International ..	944	
Waldrich Coburg, Maschinenfabrik Adolf: Fiftieth anniversary ..	997	Weldless Steel Tube Co, Ltd: Installation of £10 million continuous mill for seamless tube ..	18	Wire extruder, Farmer Norton Hydrowire, employing hydrostatic pressure ..	946	
Waldrich, H A, GmbH: Large machine tool casting in nickel SG iron ..	918	Wells-Krautkramer, Ltd ..	518	Wire-guide rollers. Hard-facing treatment for ..	88	
Walker, Crowseller & Co, Ltd: Group technology and the cell system ..	276	Wellworthy, Ltd: Installation of Ardrox automated flaw detection equipment ..	141	Wire. Strips rolled from ..	709	
Group technology applied to the production of hot water mixing valve components ..	482	Welwyn Tool Co, Ltd ..	895	Wire. Stripping machine for fine, Ebanks type 88 ..	385	
Installation of two IDRA 150-ton double-stroke die casting machines ..	826	Werner, Fritz: Type KFI Sp automatic-cycle copy milling machine ..	992	Wire termination machine with Bunker-Ramo NC ..	456	
Walker, Terry: Refractometer for monitoring cutting fluid concentration ..	728	Wessex Machine Tools, Ltd ..	217	Wolf Electric Tools, Ltd: Bench grinders and polisher ..	30	
Walkers (Century Oils), Ltd: Century cartridge-type grease gun ..	330	West German market for imported machine tools. The ..	386	Super Seven range of Sapphire sanders and grinders ..	907	
Wallwork, F E: Technical translations ..	198	Westinghouse Brake & Signal Co, Ltd: Some aspects of die casting activities ..	818	Woodworth, N A, Co: Universal power chucks facilitate small batch production ..	860	
Ward Grinders, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition ..	766	Westool, Ltd: Boost units for use with electro-magnetic clutches and brakes ..	743	Worcester Automation, Ltd: Special-purpose machines ..	106	
Machines for grinding spiral carbide cutters ..	255	Westwind Turbines, Ltd: Some applications of air-bearing spindles ..	730	Worcester open-back inclinable press ..	774	
Ward, H W, & Co, Ltd: Use of Hyvarmill-converted planing machines ..	874	Wheel. Triefus M 170 flared cup diamond ..	998	Work clamping and support. Power jacks hydraulic equipment for ..	773	
Warehouse. Computer control for large ..	174	Wheel dresser for surface grinders. Diaform tangent radius ..	630	Work handling equipment on Mikron gear hobs. Automatic ..	658	
Warehouse. New Lye Steel stockholding ..	392	Wheel dressing, PG Optidress / Projector unit for, and inspection of work ..	763, 1000	Work handling unit for induction and flame hardening. Inductolec universal ..	28	
Warm forging. Some developments in ..	841	Wheel dressing roll and drive unit, Triefus diamond-impregnated ..	810	Work holding fixture with automatic indexing. Bristol Erickson ..	557	
Warner & Swayse Co: Economical direct computer control for machine tools ..	973	Wheel forming machine. Mono Hobson grinding ..	787	Work-holding unit. New Bases ..	761	
Warsaw Technical University: Influence of cutting temperature on wear of high-speed steel tools ..	332	Wheels, Largest grinding, so far made in one piece ..	138	Work-mounting equipment for NC machines ..	850	
Wasa range of hydraulic dynamometers ..	673	Wheels. Uni-Neven Resimet bonded diamond ..	190	Work support unit for Elga Hydrashar guillotine shearing machine ..	828	
Water mixing valve components. Group technology applied to the production of hot ..	482	White, S S, Industrial: Abrasive jet for improving lubrication ..	981	Work table. Mill-Drill template-controlled ..	993	
Water pressure. Large pipes expanded by Waterbury Farrel cold heading and thread rolling machines. New ..	862	White, Thomas, & Sons, Ltd: The wide abrasive belt machine - its contribution to metal working ..	863	Worm and thread milling machine. Lambert 124 ..	584	
Watesta Electronics, Ltd ..	263	Whitney (USA) 150-ton transportable hydraulic press ..	462	Worm-gear reduction units. Producing the range of Radicon ..	882	
Watford Electric Co, Ltd: Encapsulating machine for coils ..	744	Whitney, W A, Ltd ..	462	Wotan-VWF die casting machine, First Soag-built, for export ..	823	
Watts, Wm, Ltd ..	876	Wholesale Fittings Co, Ltd: Exhibits at Electrex '70 International Electrical Engineers Exhibition ..	794	Wrench. Bahco type DS-311R impact ..	655	
Wavis Engineering Development, Ltd: Use of extruded-section aluminium tri-plate on machine tools ..	412	Wickes Corporation: Kun Machine Divn: 800-ton cold-chamber die casting machine ..	991	Wright Electric Motors (Halifax), Ltd: Extended range of grinding heads and spindles ..	154	
Wayte Engineering Co: "Spotting" drill jig ..	626	Wickman Lang, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition ..	773	Wylie Safe Load Indicators, Ltd: "Hook load indicator" ..	532	
Wear. Fundamentals of ..	169	Numerical control lathe installed at Stafford Polytechnic for machining shaft under tape control ..	687			
Wear of high-speed steel tools. Influence of cutting temperature on ..	332	Wickman, Ltd: Automatics installed at Super Oil Seals and Gaskets and their applications ..	207			
Weber, Theodore, Jr: Continuous-path NC machining of computer-designed cams ..	453	Wickman Machine Tool Sales, Ltd: 478, 563, 834, 739, 856				
Weybley & Scott, Ltd: Hydraulic Divn: Weetool hydraulic jacks ..	664	Wickman Wimet, Ltd: Exhibits at Gauge and Tool and Power Press Exhibition ..	767			
Weel-Easi bogie truck for loads up to one ton ..	807	Metal removal by skiving on turning machines ..	362			
Weighing. Digital read-out facility for ..	189	Wiggins, Henry, & Co, Ltd: Installation of two Schiess type 16 DKE NC/C vertical turning and boring mills ..	353			
Welded bi-metal strip. Electron beam ..	227	Wilkins & Mitchell, Ltd: 300-ton straight-sided tie rod press ..	774			
Welded-steel chimney flue for Drax power station ..	935	Williamson, D T N: Group technology and the cell system ..	835, 876			
Welder. Cromp-Arc 250 capacitor-discharge stud ..	906	Wilms, Horst: Cold forming gear blanks on a transfer press ..	690			
Welding. AGAmig 300 power source for MIG/CO ₂ ..	905	Wilson, Dr S B: General-purpose NC computer program systems ..	25			
Welding Alloys, Ltd: Equipment for automatic channel and beam welding ..	558	Wilson Instrument Divn, American Chain & Cable Co: Hardness testers for plastics and rubber ..	528			
Welding and drilling unit. Laser beam micro- ..	678	Rockwell hardness tester with digital read-out ..	580			
Welding demonstration. Caterpillar inertia friction ..	858	Wilson tracer-controlled milling machine. Large 6-spindle ..	371			
Welding Engineering Exhibition ..	905	Winchester, Gate, 125 hydraulically-operated programme-controlled capstan lathe ..	148			
Welding. Equipment for automatic channel and beam ..	558					
Welding equipment. Selling Arrangements for AGA ..	273					